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President's Report

FOR THE YEAR ENDING
30TH JUNE, 1927

1926/27

PRESIDENT'S REPORT

1926-1927

To the Governors of the University of Toronto;

GENTLEMEN:

I beg to submit the following report on the academic work of the University and University College during the twelve months ended June 30, 1927.

The total staff of the University and University College numbered 659, of whom 98 were professors, 62 associate professors, 62 assistant professors, 96 lecturers, associates (in medicine) and instructors in the College of Education, 1 director, 1 director of field work, 339 demonstrators, fellows and instructors with sessional appointments. They were distributed as follows:

	Professors	Associate Professors	Assistant Professors	Associates	Lecturers	Directors	Director of Field Work	Other Sessional Appointments
University (Faculty of Arts)	34	16	21	..	19	..	..	76
University College	13	14	5	..	6	..	..	8*
Faculty of Medicine	21†	12	20	20	11‡	..	..	155
Faculty of Applied Science	14	6	12	..	14§	..	..	37
Faculty of Dentistry	11	6	1**	17	2	..	..	22
Faculty of Household Science	2	..	1	..	2	..	..	6
Faculty of Forestry	1	3	..	..	..	..	..	1
Faculty of Music	..	..	..	..	4	..	..	..
Public Health Nursing	..	..	..	..	1	1	..	14††
Social Service	1	..	..	..	..	..	1	10
Ontario College of Education	2	5	3	..	4	..	..	16

*1 also in Applied Science
†1 also in University
‡2 also in Ontario College of Education; 1 also in Dentistry
§1 also in University
**1 also in Medicine
††4 also in Medicine; 1 also in Dentistry

In Victoria College there were:

Professors	15
Associate Professors	2
Lecturers	7
Special Instructor	1

In Trinity College there were:

Professors	11
Lecturers	3

In St. Michael's College there were:

Professors	15
Lecturers	11

With regret I report that the following members of the staff have died during the past academic year:

On September 17, 1926, Augustus Stephen Vogt, Mus. Doc., Dean, Faculty of Music; on December 4, 1926, Gideon Silverthorn, M.B., Professor of Medical Jurisprudence; on May 19, 1927, Miss Cornelia Harcum, B.A., Ph.D., Assistant Professor, History of Industrial Art.

The death of Dr. Vogt called forth from the community and the university

widespread expression of sorrow in which the personal regard for his worth as a man was only equalled by the sense of loss which the musical community has undergone. To his duties as first dean of the Faculty of Music he brought tact, experience and musical distinction which gave the new faculty at once a highly respected position in the university.

Dr. Gideon Silverthorn, a man greatly beloved by colleagues and students, was an ideal teacher of Medical Jurisprudence, because of his wide experience in this field, his shrewd knowledge of men, and the genial humanity with which he invested whatever he discussed.

Miss Cornelia Harcum devoted six years to her work as keeper of Greek antiquities in the Museum and lecturer on Fine Art. Though her circle of acquaintance in the university was not large, she won and held their admiration no less for her personal qualities than for her accurate and sympathetic appreciation of Greek Art.

The following retired:

John Home Cameron, M.A., Professor of French, a graduate of this university, served his *Alma Mater*, University College, for 39 years with meticulous scholarship and painstaking loyalty, often in times of indifferent health.

James Gibson Hume, B.A., A.M. (Harvard), Ph.D. (Freiburg), perhaps the first Canadian to hold a chair of Philosophy in this country, continued for 36 years to maintain the tradition of his master, Professor George Paxton Young, one of the greatest teachers that this university has had.

The following resigned:

Robert Morrison MacIver, B.A. (Oxon.), M.A., D.Phil. (Edin.), Professor of Political Economy; James Montrose Duncan Olmsted, M.A. (Oxon.), Ph.D. (Harvard), Associate Professor of Physiology; Miss Evangeline Harris, B.A. (Oxon.), M.A., Lecturer in Latin.

Dr. R. M. MacIver, after twelve years of excellent service in this university, accepted, amid universal regret, a very important position in Columbia University; and Dr. J. M. D. Olmsted has, unhappily for us, severed his connection with the university to undertake the headship of physiology in the University of California, a promotion fully merited by his work here.

Leave of absence was granted to the following:

John Home Cameron, M.A., Professor, French; James Gibson Hume, B.A., A.M. (Harvard), Ph.D. (Freiburg, Baden), Professor, Philosophy; John James Rickard Macleod, M.B., Ch.B. (Aberdeen), D.P.H. (Camb.), D.Sc., F.R.S., Professor, Physiology, for the Spring Term to exchange duties with Professor Martin of Leland Stanford University; Emilio Goggio, A.B. (Harvard), M.A. (Tor.), Ph.D. (Harvard), Associate Professor, Italian and Spanish, for the Easter Term; George Oswald Smith, M.A. (Oxon.), Associate Professor, Latin, from January to July, 1927; Edward Horne Craigie, Ph.D., Assistant Professor, Comparative Anatomy and Neurology, from January to June, 1927; Humphrey Hume Wrong, B.A. (Tor.) (Oxon.), B.Litt. (Oxon.), Assistant Professor, History, from May 1927 to June 1928; Miss Jessie Gertrude Wright, Ph.D., Lecturer, Botany, for the year to exchange duties with Miss E. R. L. Reed of Australia.

The following new appointments and promotions were made during the year:

In the Faculty of Arts—Appointments:—Jacques Chapelon, D.Sc. (Paris, Professeur Agréé, Mathematics; Leslie Charles Coleman, B.A., Professor, Plant Pathology; Frederick C. Green, M.A. (St. Andrew's), Ph.D. (Cologne), Professor, French; Gilbert Norwood, M.A. (Cantab.), Professor, Latin; John Ford

Macdonald, M.A., Associate Professor, English; Norman Archibald McRae MacKenzie, B.A., LL.B. (Dalhousie), LL.M. (Harvard), Associate Professor, Law; John Lorne McDougall, M.A., Lecturer, Economics; Jocelyn Campbell Patrick Proby, M.A., B.Litt. (Oxon.), Lecturer, History.

Promotions:—Samuel Beatty, Ph.D., from an associate-professorship to a professorship in Mathematics; Edward Alexander Bott, B.A., from an associate-professorship to a professorship in Psychology, and Directorship of laboratory; Barker Fairley, M.A. (Leeds), Ph.D. (Jena), from an associate-professorship to a professorship in German; William T. Jackman, M.A., from an associate-professorship to a professorship in Rural Economics; François Charles Archile Jeanneret, B.A., from an associate-professorship to a professorship in French; William Paul McLure Kennedy, M.A. (Dublin) (Oxon.), Litt.D. (Dublin), from an associate-professorship to a professorship in Law and Political Institutions; Edmund Murton Walker, B.A., M.B., from an associate-professorship to a professorship in Invertebrate Zoology; Louis Allen, Ph.D. (Chicago), from an assistant-professorship to an associate-professorship in French; Alexander Grant Brown, B.A., M.A. (Oxon.), from an assistant-professorship to an associate-professorship in Ancient History; Alan Freeth Coventry, B.A. (Oxon.), from an assistant-professorship to an associate-professorship in Vertebrate Embryology; David Duff, M.A., B.D. (Edinburgh), from an assistant-professorship to an associate-professorship in Latin; Thure Hedman, Ph.B. (Chicago), from an assistant-professorship to an associate-professorship in German; Hubert Richmond Kemp, M.A., from a lectureship to an assistant-professorship in Political Economy; Thomas Forsyth McIlwraith, M.A. (Camb.), from a lectureship to an assistant-professorship in Anthropology.

In the Faculty of Medicine—Appointments:—Malcolm Hectorson Valentine Cameron, M.B., Associate in Surgery; Walter Ruggles Campbell, M.A., M.D., Associate in Medicine; Charles Herbert Best, M.A., Assistant Professor of Physiological Hygiene.

Promotions:—Eric Ambrose Linell, M.B., Ch.B., M.D. (Manchester), from an assistant-professorship to an associate-professorship in Anatomy; Norman Burke Taylor, M.B., from an assistant-professorship to an associate-professorship in Physiology; George Herbert William Lucas, Ph.D., from a lectureship to an assistant-professorship in Pharmacology; George Sills Young, B.A., M.B., from an associateship to an assistant-professorship in Medicine.

In the Faculty of Applied Science—Appointments:—Kenneth Bell Jackson, B.A.Sc., lecturer, Engineering Physics and Photography.

Promotions:—Maitland Crease Boswell, B.A.Sc., M.A. (Harvard), Ph.D., from an associate-professorship to a professorship in Organic Chemistry; Thomas Richardson Loudon, B.A.Sc., from an associate-professorship to a professorship in Applied Mechanics; John Hamilton Parkin, B.A.Sc., M.E., from an assistant-professorship to an associate-professorship in Mechanical Engineering; Robert J. Montgomery, Cer. E. (Ohio), from a lectureship to an assistant-professorship in Ceramics; James Edwin Toomer, B.S. (N. Carolina State College Engineering), from a lectureship to an assistant-professorship in Metallurgical Engineering.

In the Faculty of Household Science—Appointment:—Miss Alice C. Willard, A.M. Knox (Ill.), S.M., Ph.D. (Chicago), assistant professor of Household Science.

Promotions:—Miss Clara Cynthia Benson, Ph.D., from an associate-professorship to a professorship in Food Chemistry; Miss Annie Lewisa Laird, M.S. (Drexel), from an associate-professorhsip to a professorship in Household Science.

In the Faculty of Dentistry—Appointment:—S. M. Richardson, D.D.S., associate in Dentistry.

The total number of students registered in the university in 1926-1927 was 5,629, distributed as follows:

				Men	Women	Total
Faculty of Arts				1,485	1,295	2,780
University of Toronto	204	183	387			
University College	748	587	1,335			
Victoria College	335	340	675			
Trinity College	103	95	198			
St. Michael's College	107	107	214			
Registered twice	12	17	29			
Faculty of Medicine				688	71	759
Faculty of Applied Science and Engineering				483	4	487
Faculty of Household Science				..	98	98
Ontario College of Education				188	220	408
Faculty of Forestry				49	..	49
Faculty of Music				21	25	46
School of Graduate Studies				274	91	365
Faculty of Dentistry				299	19	318
Department of Social Service				12	87	99
Department of Public Health Nursing				..	265	265
University Extension (Occupational Therapy)				..	25	25
Registered twice				54	16	70
				3,445	2,184	5,629

The figures may be further analysed as follows:—

FACULTY OF ARTS

University of Toronto

	Men	Women	Total
Teachers' Courses and Summer Session	175	166	341
Occasional Arts students	29	17	46
	204	183	387

University College

	Men	Women	Total
First year undergraduates	259	180	439
Second year undergraduates	172	150	322
Third year undergraduates	154	114	268
Fourth year undergraduates	133	107	240
Occasional students	30	36	66
	748	587	1,335

Victoria College

	Men	Women	Total
First year undergraduates	117	97	214
Second year undergraduates	100	93	193
Third year undergraduates	53	76	129
Fourth year undergraduates	63	67	130
Occasional students	2	7	9
	335	340	675

Trinity College

	Men	Women	Total
First year undergraduates	46	33	79
Second year undergraduates	24	31	55
Third year undergraduates	18	16	34
Fourth year undergraduates	13	14	27
Occasional students	2	1	3
	103	95	198

St. Michael's College

	Men	Women	Total
First year undergraduates	47	31	78
Second Year undergraduates	26	29	55
Third year undergraduates	19	30	49
Fourth Year undergraduates	15	16	31
Occasional students	..	1	1
	107	107	214

FACULTY OF MEDICINE

	Men	Women	Total
First year undergraduates	123	14	137
Second year undergraduates	123	10	133
Third year undergraduates	115	17	132
Fourth year undergraduates	103	11	114
Fifth year undergraduates	99	10	109
Sixth year undergraduates	106	7	113
Candidates for Degree of B.Sc. (Med.)	6	1	7
Candidates for D.P.H	4	1	5
Post Graduate students	7	..	7
Occasional students	2	..	2
	688	71	759

FACULTY OF APPLIED SCIENCE AND ENGINEERING

	Men	Women	Total
First year undergraduates	162	1	163
Second year undergraduates	110	..	110
Third year undergraduates	109	1	110
Fourth year undergraduates	102	2	104
	483	4	487

FACULTY OF HOUSEHOLD SCIENCE

	Men	Women	Total
First year undergraduates	..	39	39
Second year undergraduates	..	34	34
Third year undergraduates	..	16	16
Fourth year undergraduates	..	6	6
Occasional students	..	3	3
	..	98	98

ONTARIO COLLEGE OF EDUCATION

	Men	Women	Total
Students in attendance	66	178	244
Extra-mural students	29	30	59
Students in B.Paed. course	93	12	105
	188	220	408

FACULTY OF FORESTRY

	Men	Women	Total
First year undergraduates	21	..	21
Second year undergraduates	10	..	10
Third year undergraduates	10	..	10
Fourth year undergraduates	8	..	8
	49	..	49

FACULTY OF MUSIC

	Men	Women	Total
First year undergraduates	5	5	10
Second year undergraduates	7	12	19
Third year undergraduates	6	8	14
Occasional student	1	..	1
Candidates for Mus.Doc. degree	2	..	2
	21	25	46

SCHOOL OF GRADUATE STUDIES

	Men	Women	Total
Candidates for Ph.D	73	15	88
Candidates for M.A	98	41	139
Candidates for M.D	6	..	6
Candidates for M.A.Sc	4	..	4
Candidates for M.Arch	1	..	1
Candidates for C.E	2	..	2
Candidates for Met.E	1	..	1
Candidates for D.Paed	41	3	44
Candidates for M.S.A	5	..	5
Graduate students	43	32	75
	274	91	365

FACULTY OF DENTISTRY

	Men	Women	Total
First year undergraduates	59	1	60
Second year undergraduates	61	..	61
Third year undergraduates	60	2	62
Fourth year undergraduates	59	..	59
Fifth year undergraduates	59	1	60
Graduate student	1	..	1
Occasional students (Dental Nurses)	..	15	15
	299	19	318

DEPARTMENT OF SOCIAL SERVICE

	Men	Women	Total
First year full-time students	2	17	19
Second year full-time students	..	21	21
Part-time students	10	49	59
	12	87	99

DEPARTMENT OF PUBLIC HEALTH NURSING

	Men	Women	Total
Full-time students	..	30	30
Part-time students	..	235	235
	..	265	265

The numbers examined in the different departments of the university, including those persons granted standing for military service, were as follows:

Arts:		
Fourth Year	433	
Third Year	479	
Second Year	618	
First Year	783	
Teachers' Course	308	
		2,621
Medicine:		
Sixth Year	112	
Fifth Year	108	
Fourth Year	113	
Third Year	130	
Second Year	111	
First Year	133	
D.P.H	5	
B.Sc. (Med.)	7	
		719

Applied Science and Engineering:		
Fourth Year	103	
Third Year	107	
Second Year	108	
First Year	155	
		473
Household Science		92
Education		356
Forestry		50
Music		46
Graduate Studies		99
Dentistry		317
Social Service		77
Public Health Nursing		31
Law		12
Pharmacy		152
Agriculture		34
Veterinary Science		11
Local Examinations in Music		17,847

The degrees conferred were:	Men	Women	Total
LL.D. (Honorary)	5	1	6
Ph.D	8	..	8
M.A	56	20	76
M.D	4	..	4
M.A.Sc	4	..	4
M.Arch	1	..	1
Mus.Doc	1	..	1
M.E	1	..	1
C.E	2	..	2
D.Paed	3	..	3
B.A	204	211	415
B.Comm	34	4	38
M.B	100	7	107
B.Sc. (Med.)	6	1	7
B.A.Sc	102	1	103
B.Arch	5	1	6
B.H.Sc	..	6	6
B.Paed	29	3	32
B.Sc.F	9	..	9
Mus.Bac	1	2	3
LL.B	5	..	5
D.D.S	68	2	70
B.S.A	31	2	33
B.V.Sc	10	..	10
Phm.B	120	7	127
D.P.H	1	..	1
	810	268	1,078

The total number of students registered on the same basis as last year in the university was larger by 149. It will be observed that the increase in these figures is chiefly in the Faculty of Arts.

From outside sources testimony is being constantly borne to the quality of the work done in the university. Henceforth we must be prepared to undergo comparison with the leading universities of the world. Of late investigations into our honours system in arts have been made by competent observers who remark with commendation upon the educational value of the result. Also, the character of our undergraduate medical training has been most favourably reviewed by visitors from Britain and the United States. While we do not claim by comparison with other Canadian or American universities an undue pre-eminence, the judgment of visitors enables us to arrive at a better understanding of the value of our methods of instruction, and it may serve to direct criticism to the weak points, and avert mere faultfinding, which is only discouraging to faithful and effective teachers, and results in harm rather than good. That is not to say that there is not much room for improvement, but it is a satisfaction

to be told by competent judges that they recognise in this place an effort to maintain intellectual integrity. Should that ideal be blurred, the university would justly become a mark for the detractor, and would fail as a leader for this Dominion at a time when the maintenance of the highest standards is urgently required.

The outstanding event in the Faculty of Medicine was the opening of the Hygiene Building in June, when Sir George Newman, K.C.B., Chief Officer of Health of England and Wales, delivered an address. The establishment of the School of Hygiene made possible by the gift of the Rockefeller Health Board means a great deal not only for the undergraduate and graduate in medical education in this university, but for the promotion of the health of this country.

The extension of the Toronto General Hospital, which is to include 180 additional public ward beds, enlargement of the Out-patient department, a well-equipped X-ray department, more accommodation for nurses, which is badly needed, and for private patients, has been engaging the attention of the Trustees throughout the year, and they have made splendid and successful efforts to raise the very large sum of money necessary to carry out these great plans. They are to be congratulated upon this result. Many difficult problems have arisen in respect of the location of the Pathological Building with the new clinical and medical research laboratories, which have been carefully considered by both the University Governors and Hospital Trustees, and it is hoped that they will soon be satisfactorily solved.

I would direct attention to the very interesting and valuable work, outlined in the Dean's report, which has been done by several members of our staff in co-operation with representatives of other universities in giving addresses and demonstrations during the vacation months to practitioners throughout the provinces of the Dominion. This has been made possible by the generous grant of $30,000 by the Sun Life Assurance Company, and these clinics have been eagerly welcomed by hundreds of the profession who were given an opportunity to acquaint themselves with some of the newer methods and treatment in medicine and surgery.

The Faculty of Dentistry has been adjusting itself successfully to the new conditions. Numbers have been falling, but standards have been rising, and a definite effort is being made to create a desire for graduate work and to develop research. Also the Dean and other members of the faculty have maintained touch with the graduates not only in this province but in the West, and are seeking to develop a service for them.

The tide has turned in regard to the numbers of those entering the Faculty of Applied Science. Of recent years, by reason of the higher standards of entrance and dullness in industry, there had been a steady decline, but the arrival of prosperity awakens the expectation that both in engineering undertaking and in general industry there will be a larger demand for the scientifically trained engineer.

No better proof could be asked for of the character of the work done in the Faculty of Forestry during the last twenty years than the recent action of the Provincial Government in seeking the aid of the Dean and faculty of Forestry in the promotion of its new policy in respect of conservation and reforestation. But if more proof were needed it could be afforded by the fact that companies as well as governmental departments are asking for more of our graduates to fill positions.

The reports on research, on publications and of the Graduate School indicate how powerfully the spirit of investigation is moving within the university. The growth of the Graduate School will be limited only by the facilities we are able to offer. The fulfilment of this duty of our university involves larger outlays on laboratories, library and staff. But more scholarships also are badly needed if we wish to have Canadians pursue advanced work at home.

Of late a good deal has been heard, and not unreasonably so, about the exodus of the graduates of Canadian universities to the United States. I have had a return made of the statistics in respect of our own graduates during the ten years from 1917 to 1926. In this period 8,532 degrees, exclusive of honorary degrees, have been conferred by this university, and of those who hold them 1,176 are now in the United States. They are to be found in nearly every State of the Union, but in largest numbers, as might be supposed, in Michigan, New York, Pennsylvania, Ohio and Illinois. There are 412 holding degrees in Medicine, 247 in Arts, 224 in Applied Science, 75 in Dentistry, 218 with degrees from miscellaneous departments, such as Veterinary Science, Agriculture, Pharmacy, and, in addition, postgraduate degrees. It must be borne in mind that many of the medical graduates are doing interne work in the large hospitals of the American cities, and that a good proportion of them will return to Canada to practice. Another factor in the situation is the number of born Americans who came here for their education. According to the figures of our registration these would be at least 150. It would seem, therefore, that a fair estimate of the number of our graduates of the past decade of Canadian birth who are permanently in the United States is between 900 and 1,000, that is to say about 11 per cent. of the total. Though this number is too large for the healthful growth of our country, it is, I believe, much smaller proportionally than in other walks of life, and we get a better return the longer we keep our young people at home in order to educate them to meet the needs of our own society.

The large post-war classes could not rapidly be absorbed in Canada during the time of readjustment, and there is not much doubt but that the exodus in those years was greater than normal. In some of the professions there are signs of return.

But the exodus of graduates to the United States has been so much larger than we should wish, that every effort should be furthered by means of employment agencies and otherwise that will hold out to our graduating classes the opportunities of our own land. It is encouraging to know that last year every graduate of the new Commerce course, now one of our largest departments, got employment at home, and that was largely due to the efforts of Professor Jackson, his colleagues and the committee of business advisers.

Another encouraging fact is that so many of our graduates have gone to our West. When recently I visited ten of the leading cities I had the names of 2,400 graduates of this university. In addition there are, of course, very many more scattered in the smaller towns and villages, and it is therefore evident that the University of Toronto has made a very important contribution to the development of the Dominion.

Worse, however, than losing a certain number of our graduates would be the condition in which, as in Australia, there is no outlet in a neighbouring country of similar civilization for the superabundance of the highly educated. Were there to be stagnation from unemployed talent the source of supply even for home necessities might be diminished; whereas, emigration has kept the streams of our intellectual activity moving, and we may hope that in time home development will be sufficient to absorb almost all. There is bound to be, however, some interchange of educated life between the countries of the civilized world. We are enriched by those who come to us, and we in turn contribute to the common good of mankind by sending a proportion of our own graduates abroad.

During the latter half of the academic year preparations for the celebration of the Centenary occupied a great deal of attention. A large committee representative of the Governors, the Senate, the faculties, the administrative staff, graduates and undergraduates was appointed, and under them were constituted sub-committees on publicity, hospitality, finance, guests, the programme, and athletic and undergraduate activities. The Alumni Federation, headed by Dr. R. T. Noble, threw themselves with energy into the work, and a special committee

led by Mr. H. D. Scully undertook to complete the Soldiers' Tower by placing in it a carillon of twenty-three bells at a cost of $40,000, to be furnished by the graduates.

The charter was granted by King George IV to King's College on March 15, 1827, and on March 15, 1927, invitations were issued to about five hundred leading universities, colleges, and learned and scientific societies of the world to be represented at the celebrations of the Centenary. It was decided to hold these celebrations from October 6 to 9 in order that the undergraduates might be able to share in the proceedings, and also because it seemed to be the most convenient time for the visit of delegates from other universities.

Until the first of May the secretarial work was most efficiently done by Mr. A. B. Fennell, Assistant-Registrar, and Mr. W. J. Dunlop undertook a large part of the publicity. On the first of May Mr. Wilfred C. James, a graduate of the university, took on the very complicated arrangements which had been outlined, and did most valuable work as secretary. The extra burdens thrown upon the Superintendent's and other offices were gladly undertaken and their effectiveness has been once again demonstrated. The acknowledged success of the celebrations, which have since taken place, was largely due to the efforts and co-operation of the many loyal friends of the university.

The completion of the first century of the life of a university in the new world has afforded an opportunity of review and of comparison which is encouraging. Mr. Stewart Wallace's history has well set forth the controversies of the earliest days, the long continued struggles, the emergence of new academic principles, such as federation, and the rapid growth of recent years. The celebrations also gave the opportunity to the universities and learned and scientific societies of the world to express their respect for the work that has been done here during all these years, and this testimony is bound to result in stimulating the staff for renewed effort.

The obvious well-being and self-control of the men and women undergraduates of the University and University College are due not merely to the homes and schools from which they have come, but to the influences in Hart House which emanate from Mr. Bickersteth, Dr. Porter and Mr. Reed, and in the Women's Residences and Unions from Dr. Edith Gordon, Mrs. Kirkwood and the other ladies associated with them. Considering the multitude of difficult problems in discipline with which the large universities on this Continent are faced we are happy that those in charge of the social and physical life of our students deal with them with such sympathy, idealism and wisdom.

Again, however, I must draw attention to the urgent need of a building for the physical training of the women of the University. With the increasing numbers of women in the University the situation has become extremely difficult and provision for their needs should not be delayed.

It is a satisfaction that the Governors have undertaken to make interim and partial provision for the needs of the Botany Department in the erection of a greenhouse, which may be transferred to the new site when new quarters are acquired for this department.

During the session the following special lectures were delivered:

A course of twelve lectures on "The Ethnological Background of European History" by Sir Bertram Windle, F.R.S., special lecturer in Ethnology in the University of Toronto; two lectures on "Coal Measures of Europe "and "Marine Carboniferous of Western Europe" by Professor J. Delepine, University of Lille, France; three lectures on "Les Poètes du Canada français" by Msgr. Camille Roy, Laval University, Quebec; three lectures on "Caricature in Science", "Physical Chemistry and Medicine", and "The physicochemical constants of polymorphous solids" by Dr. Ernst Cohen, Professor of Physical Chemistry, University of Utrecht, Holland; three lectures on "India and the

Political Awakening of Asia" by Sir Frederick Whyte, K.C.S.I., LL.D., First President of the Indian Legislative Assembly; four lectures on "The League of Nations" by Sir Herbert Ames; two lectures on "Milton" and "Wordsworth" by Professor H. J. C. Grierson, University of Edinburgh; a lecture on "Dorothy Wordsworth" by Dr. Ernest de Sélincourt, Professor of English, University of Birmingham; on "The Architecture of the Epic" by Professor R. S. Conway of the Victoria University of Manchester; on "Intellectual Co-operation and the League of Nations" by Dr. Alfred Zimmern, Director, International Institute of Intellectual Co-operation, Paris; on "Sung Art" by Mr. Lawrence Binyon, Deputy Keeper of the Oriental Prints and Drawings in the British Museum; on "Art and Civilization" by Professor J. B. S. Holbourn, Carleton College; on "The New Interpretation of Preventive Medicine" by Sir George Newman, K.C.B., Chief Medical Officer of the Ministry of Health of England and Wales; on "Recent Work on the Physiology of Muscular Exercise" by Professor A. V. Hill, Fullerton Professor of the Royal Society, London, England; on "The Relation of the Basic Sciences to Surgery" by Dr. W J. Mayo of Rochester, Minn., the Donald Balfour Lecturer for Lister Day celebration.

Under the auspices of the Alumni Federation the following lectures were delivered: On "The Detective Story" by Associate Professor J. F. Macdonald of the Department of English, University College; on "Some Contemporary Dramatists" by Professor Gilbert Norwood, of the Department of Latin, University College.

Dr. F. A. Mouré, university organist, again gave a series of ten Organ Recitals in Convocation Hall to large and appreciative audiences.

During the past year the University has received the following benefactions:

From Eaton Endowment (annual payment), $25,000; Rockefeller Foundation, third payment of account of School of Hygiene, current expenses, $12,500; Laura Spelman Rockefeller Memorial for Child Research, $10,000; Carnegie Corporation for Research in Physics, $10,000; Carnegie Corporation for Research in Diabetes, $5,000; Graduate Fellowships: Colonel R. W. Leonard, $500, Imperial Oil Limited, $500, Sir Edward Kemp, $500, Robert Simpson Company, $500, Canadian Pacific Railway, $1,500; Canadian National Clay Products, for Ceramics Lectureship, $3,000; E. R. Peacock, Esq., and Sir Joseph Flavelle, Bart., for Flavelle-Peacock Lectureship, $1,250 each; Herbert W. Irwin Memorial Scholarship, $1,050; David Fasken Trust, $2,000; Scholarships in Mathematics, Anonymous, $800; Professors Beatty and Pounder, $100; Coleman Portrait Committee for medal in Geology, $500; Robert Bruce Scholarship, $461; Robert Simpson Co. Ltd. matriculation scholarship, $350; Sir Edmund Walker scholarship, $150; Boiler Inspection scholarship, $150; The T. Eaton Co. Ltd. for Sir John Eaton Memorial Scholarship, $120; Hon. N. W. Rowell, K.C., for Langford Rowell Scholarship, $100; McCaul Scholarship in Classics: Principal M. Hutton, $25; G. A. H. Fraser, Esq., $25; A. M. Stewart, Esq., K.C., $25; Holy Blossom Synagogue Scholarship, $50; Dr. R. A. Reeve prize, $50; University College Alumnae, for prize in English, $10.

Along with some nineteen other universities and colleges of this continent the University of Toronto has been the recipient of a valuable gift from the Carnegie Corporation for use in the teaching of art consisting of reproductions in photograph and colour facsimiles of the greatest works in architecture, sculpture and painting; original prints representing different processes and schools from the sixteenth century to the present; a set of textiles dating from antiquity to the present day and illustrating all kinds of materials and design characteristic of different races; and books on the art of every period and people. While this is valuable for the university at present it will be increasingly so when a department of the Fine Arts is more fully developed.

Two special convocations were held: on November 15 for the purpose of conferring the honorary degree of Doctor of Laws upon His Excellency, the Right Honourable Viscount Willingdon, G.C.S.I., G.C.M.G., G.C.I.E., G.B.E., Governor General of Canada; and on January 4 for the purpose of conferring the same honorary degree upon the Right Honourable Stanley Melbourne Bruce, Prime Minister of Australia.

All of which is respectfully submitted.

R. A. FALCONER,
President.

November 10, 1927.

APPENDIX A

(1) Report of the Principal of University College.
(2) Report of the Dean of the Faculty of Medicine.
(3) Report of the Dean of the Faculty of Applied Science and Engineering.
(4) Report of the Dean of the Ontario College of Education.
(5) Report of the Dean of the Faculty of Forestry.
(6) Report of the Faculty of Music.
(7) Report of the Dean of the School of Graduate Studies.
(8) Report of the Dean of the Faculty of Dentistry.
(9) Report on Research.
(10) Publications.
(11) Report of the Librarian.
(12) Report of the Director of the Department of Social Service.
(13) Report of the Director of the Department of Public Health Nursing.
(14) Report of the Director of University Extension and Publicity.
(15) Report of the Director of the Department of Military Studies.
(16) Report of Health Services.
(17) Report of the Warden of Hart House.
(18) Report of the Director of the Connaught Laboratories.
(19) Statement regarding the Biological Museum.
(20) Statement regarding the Museum of Geology.
(21) Statement regarding the Museum of Palaeontology.
(22) Statement regarding the Museum of Mineralogy.
(23) Statement regarding the Museum of Archaeology.

(1) REPORT OF THE PRINCIPAL OF UNIVERSITY COLLEGE

(*Professor Maurice Hutton*)

The session of 1926-1927 for University College, the policy of removing the first year (pass and honours) from the University to certain approved schools having remained in abeyance, has been uneventful.

We have welcomed with pleasure the appearance of Professor Gilbert Norwood at the head of the department of Latin, and the addition of Professor Green to the department of French. Professor Norwood has made his first appearance to the larger university public by lecturing in Convocation Hall on the modern drama; if any one still supposes that a professor of Latin is, by the necessity of things, still bound to be a gerund-grinder only, he is converted already: or, if he is not, his conversion has begun. Not that Professor Norwood is indifferent to the disciplinary value in education, of Latin grammar and to the essential part it plays in the early years of the Arts Course for the B.A. degree: far from it; he is an accurate and scientific scholar, such as has always made the fame and still makes it, of the University of Cambridge, to which he, no less than his predecessor, John Macnaughton, belongs. But he is one of that small and distinguished band of men, like his predecessor, who knows how to apply to all the intellectual interests of life, the training and knowledge which he has

gathered from his study of the Classics. He is no mere specialist in Latin: as a matter of fact his publications have been hitherto chiefly in the field of Greek, as was to be expected. The conquests of Greece over Rome never cease, but continue from century to century. Professor Norwood derives from his Greek studies that power of popularizing the Classics, which in this age of publicity and propaganda is not less essential, is even more essential, among students very practical and very keenly alive to the interests of the modern world and of Canada, than accurate scholarship.

The College which has gained by the advent of Professor Norwood has lost something by the absence on sick leave of Professor Oswald Smith of the same department during the latter part of the session. Professor Smith is invaluable as Registrar, not less than as a singularly exact scholar and good lecturer. He knows a Registrar's duties as guide, philosopher and friend to young students, as few others can know them, and is much missed. But Professor McAndrew, of the other over-worked department, or rather of one of the other two over-worked departments—for English as well as French and Latin is necessarily over-worked—has been borrowed from the department of French, to take Mr. Smith's place as Registrar in his absence, and has filled the gap well. It stands to reason that all three departments—Latin, French and English—are ever in need, as the numbers of students grow, of additions to the staff.

If that need is not quite as great as mere numbers might at first sight suggest it is because a college breathes a different atmosphere from a school, leaves more to the initiative and intelligence of the members of its classes than a school can do, essays a more ambitious task, that of leading its students to think more and memorize less, and in general does more to make men and women of them, instead of leaving them boys and girls, who have successfully crammed a translation of Horace, or digested the irregular French verbs.

We have all welcomed Professor Malcolm Wallace as the successor of Professor Alexander. Alexander is a hard man to succeed: but Malcolm Wallace has been an influence and an inspiration to our classes in English before he became head of his department and he had a good start and a good chief before the full responsibility of headship devolved upon him. He and other friends and students of Professor Alexander have started a fund for an Alexander lectureship in English, to be a fitting memorial of the life-work of his predecessor.

The Literary and Athletic Society, and the students of the college generally, have been deeply interested in the celebration of the forthcoming Centenary of the University and have made progress towards filling that part of the functions which will devolve on the students still undergraduates.

The college welcomes Provost Cosgrave in his new duties at Trinity College, which have begun auspiciously.

It is also not less indebted this year than in previous years to the beneficent activities and leadership of the Warden of Hart House, Mr. Bickersteth, than whom no one could have discharged a new and experimental work more tactfully and efficiently, and also, withal, with more universal acceptance and recognition: as was evident in the demonstration of respect and affection with which all the students of this large and growing University greeted his birthday last autumn. But Mr. Bickersteth is already a household name in the universities not only of Canada but of the United States: "May the king live forever".

I ought to add that the Prime Minister and Minister of Education has wisely appointed Professor Jeanneret, chairman of the department of French, to conduct a summer school in the Province of Quebec, for the furtherance of the *bonne entente*, started by one of his former chiefs, and for the encouragement of that bilingualism which is essential to Canadian well-being.

(2) REPORT OF THE DEAN OF THE FACULTY OF MEDICINE

(Professor A. Primrose)

From year to year the facilities afforded for study in the Faculty of Medicine have been materially increased and a record of these achievements has been published in the annual report of the Dean. Within the last few years we have noted the erection of a new building for Anatomy, the completion of a reception Hospital where a Psychiatric Clinic has been established, and a large building, with extensive laboratories, which was officially opened by Sir George Newman on June 9th as the "School of Hygiene", where instruction in Hygiene, Preventive Medicine and Public Health is given. The space vacated in the Medical building by the department of Hygiene has been utilized for the provision of a large addition to the laboratories and teaching quarters, in Pharmacy and Pharmacology as well as for a rearrangement of the laboratories of Physiology and Biochemistry. At the moment plans are being considered for a building in which will be housed the laboratories of Pathology and Bacteriology, the Clinical departments and the laboratories of the Banting and Best chair of Medical Research. In addition to these purely university projects there are other enterprises which directly affect our equipment and provide an opportunity for increased efficiency; we may refer to the erection of a country hospital in connection with the Hospital for Sick Children and the large addition, at present under construction, in the Toronto General Hospital; to the latter undertaking the University of Toronto has contributed a large sum of money.

Dr. John Stewart, of Halifax, Nova Scotia, was the first to suggest an annual celebration of the 5th of April, as Lister Day, by all the Faculties of Medicine in Canada. A circular letter was issued by the Canadian Medical Association, signed by Drs. John Stewart and F. N. G. Starr, conveying this suggestion to the various Universities concerned. Our Faculty of Medicine determined upon the fixed policy of combining the Donald Balfour Lectureship (the foundation of which was noted in the report of the Dean last year) with the celebration of Lister Day. In accordance with this plan the first Balfour lecture was delivered by Dr. W. J. Mayo of Rochester, Minnesota, on April 5th, 1927, the centenary of Lister's birth. A very large audience gathered in Convocation Hall to hear this eminent surgeon deliver the lecture in question. Two of Lister's former house surgeons were present on the platform, Emeritus Professor F. LeM. Grasett and Dr. E. St. George Baldwin. In connection with the celebration of the centenary of Lister's birth we note that Mr. Irving H. Cameron, Emeritus Professor of Surgery, took a prominent part in the proceedings held in Glasgow on April 1st.

With deep regret we record the death of Dr. Gideon Silverthorn, professor of Medical Jurisprudence and associate in Surgery and Clinical Surgery, on December 4th, 1926. At the time of his death he was senior surgeon in St. Michael's Hospital. He had served on the teaching staff for many years, with great efficiency. As a member of the faculty, his advice was always available; his sound judgment and counsel were of great value. The students, many of whom he assisted with unstinted generosity, will miss him greatly. His colleagues in the faculty mourn the loss of one who was strongly entrenched in their affections and whose services they valued highly.

For three months, in the Easter term, Professor J. J. R. Macleod occupied the chair of Physiology in the Leland Stanford University of California, while Professor E. G. Martin of that institution took Professor Macleod's place in Toronto. Of recent years exchange of teachers between universities has been advocated and carried out. In the present instance it proved of definite benefit to both institutions concerned. On April 24th, 1927, Professor J. G. Fitzgerald was the accredited representative of Canada at the International Rabies con-

ference held at the Pasteur Institute, Paris, under the auspices of the Health Committee of the League of Nations. In November Professor Klotz returned from the expedition to Nigeria, where he was associated with the Yellow Fever Commission. On June 16th Dr. F. N. G. Starr, professor of Clinical Surgery, was elected President of the Canadian Medical Association and presided over the annual meeting at Toronto.

We have pleasure in recording the appointment of Dr. M. M. Crawford as head of the department of Medical Jurisprudence with the rank of "associate". Dr. Crawford is chief coroner for the city of Toronto, and has devoted many years to the intensive study of medico-legal matters. He is exceptionally well qualified for the position he now holds in the Faculty of Medicine.

At convocation on June 9th a portrait of the late Dean C. K. Clarke painted by Mr. Curtis Williamson was unveiled by the President, who referred to Dr. Clarke as "a Dean beloved by colleagues and students, and one of the best friends of the University". On January 3rd Major General J. T. Fotheringham, C.M.G., professor of the History of Medicine, was presented with his portrait. The artist was Mr. J. W. L. Forster. This portrait was painted and presented to the University in accordance with the terms of the will of the late Dr. George Strathy. Both of these portraits now hang in the Faculty room.

Medicine:—No changes have been made in the organization of the department of Medicine, including the sub-department of Paediatrics. Dr. Trevor Owen was appointed, whole time, junior demonstrator in Medicine after spending six years of post-graduate study in Toronto, Baltimore and London, England. With regret the resignation has been received of Dr. King Smith, assistant professor, in charge of Dermatology. He was an able teacher with sound clinical judgment. He is succeeded by Dr. E. J. Trow, who has been an assistant in the department for several years. Dr. Ray Farquharson, fellow in Medicine, will spend the coming year in post-graduate work in Boston. He is succeeded by Dr. E. J. Maltby. The resignation has been received of Dr. M. J. Wilson, research fellow in Medicine.

Many problems have been studied by clinical investigation. Of these we may mention the jaundice which may follow the administration of arsphenamine compounds. A method of treatment, which has been found effective in preventing jaundice under such circumstances, has been referred to in the published reports of Drs. Dixon and Campbell and Miss Hanna. The striking results obtained by Minot and Murphy in treating Addison's pernicious anaemia by the feeding of liver has been confirmed in cases treated in the clinic. Dr. Campbell, and Dr. Markowitz, of the department of Physiology, have shown that paralytic ileus, experimentally produced in animals, is due to an inhibition of intestinal movements. They found that intra-thecal anaesthesia relieved it. This probably explains the successful results of Wagner, and later Asteriodes, in the treatment of this condition in man following spinal anaesthesia. Drs. Campbell and Markowitz have also studied the preferential metabolism of certain carbohydrates and related substances; their findings have been applied to the treatment of diabetes mellitus. Dr. M. J. Wilson has studied, for the past three years, the cause and origin of symptoms commonly associated with disease of the upper gastro-intestinal tract, particularly in its relation to neuro-muscular reaction. Certain patients were studied by the X-ray after a barium meal. The effect of drugs was studied in a similar manner both in patient and normal individuals. The work was carried out in association with Dr. W. H. Dickson of the department of Radiology and will be published shortly.

In the sub-department of Paediatrics many problems were studied in the laboratories, *e.g.*, analysis of the contents of small and large intestine from autopsies; a comparison of dried, evaporated, condensed and fresh milks; a large sample of breast milk was analysed for fat, protein and separate salt

constituents; the analysis of a modified powder milk, vitone, recommended for nursing mothers; determination of the protein fractions in blood intended as controls in similar determinations in cases of malnutrition and dehydration; the changes resulting from the incubation of the banana in milk, with the endeavour to explain the value of bananas in the feeding of infants and older children; conditions controlling bacterial growth and metabolism; blood chemistry in diabetes, nephritis and intestinal intoxication; sugar tolerance tests in goitre; the antirachitic effect of sunlight and skylight on rats and the value of special kinds of glass from the antirachitic standpoint.

Surgery:—The work of the year has gone forward with possibly keener enthusiasm than ever before. Much more emphasis is being placed on the practical work at the bedside and in the out-patient department, to the great advantage of students preparing for general practice.

Dr. George E. Wilson has been transferred from the emergency staff of the Toronto General Hospital to become surgeon-in-chief of St. Michael's Hospital, a position rendered vacant by the death of Dr. Gideon Silverthorn. Dr. Wallace Scott will continue to teach at St. Michael's Hospital, where he has assumed the duties of consultant in the surgical department. The facilities for clinical teaching in the Western Hospital are being steadily improved with added equipment and new buildings.

Dr. Roscoe Graham spent some months in post-graduate work in France, Switzerland and Great Britain. Dr. Kenneth McKenzie has, for similar purposes, visited France. Such study tours are encouraged because of the great benefit which accrues to both staff and students.

Obstetrics and Gynaecology:—Dr. J. G. Gallie, associate in this department, has resigned his position with the intention of devoting all his time to private practice. Dr. Gallie has been responsible, in no small degree, for the successful establishment of the pre- and post-natal clinics. It is with great regret we lose his efficient services.

During the past two years a system has been adopted whereby the student is informed, at the end of his period of study, as to the standard of the work he has accomplished. This plan, which has been adopted in both the fifth and sixth years, has proved beneficial and, it is believed, has resulted in fewer failures at the annual examinations.

Research work by Dr. Van Wyck in the toxaemias of pregnancies has proceeded in the metabolism wards in co-operation with the department of Pathological Chemistry. Progress has been made in the study of puerperal infections by Dr. Dafoe, in co-operation with the staff in the Connaught laboratories.

The special departments of Ophthalmology and Oto-laryngology:—The clinical and didactic work of the year in ophthalmology has been carried on as usual at the Toronto General Hospital and the Hospital for Sick Children.

The number of gross pathological specimens in the museum has been greatly increased by Dr. A. E. MacDonald, the research fellow, who has also published his result of his study of the microscopic examination of the eyes of patients dying from acute alcohol poisoning.

The report in oto-laryngology states that special effort has been made to improve the teaching, and, in particular, to make the teaching most suitable for those who are preparing to enter general practice.

Therapeutics:—Besides the routine work of instruction which was carried on as usual, special study was made of the clinical action of ephedrin sulphate and sulpho-cyanate of sodium, both of which substances seem to promise well in the effect they produce on abnormal arterial blood pressure.

Psychiatry:—During the second half of the fourth year term an introductory course of lectures was given by the head of the department, covering the elementary principles of psychopathology and the methods of approach to the

study of psychiatry. During the first half of the fifth year term this course was continued, dealing with general symptomatology and pathogenisis, the course consisting both of lectures and clinical demonstrations. During the sixth year a course was given at the Psychiatric Hospital. With the added hospital facilities, and by dividing the classes in groups, the teaching was greatly improved in comparison with previous years. Each group attended one clinic at the Ontario Hospital, Toronto, in order to see certain types of mental disease not demonstrable in the Psychiatric Hospital.

The fifth year option course under Dr. Lewis was extended somewhat; a considerable variety of problems in extra-mural psychiatry was studied. Dr. B. T. McGhie, superintendent of Westminster Hospital, London, who was visiting Canada, demonstrated problems in juvenile delinquency. Dr. Hincks gave three lectures on the history of the mental hygiene movement and its development. Dr. C. M. Crawford demonstrated methods of examination and treatment of neurosyphilis. Finally Dr. G. W. McLarty gave three clinics in the Toronto General Hospital illustrating the relationship between general medicine and psychiatry as illustrated by the clinical cases in the wards.

Radiology:—Lectures have been given to the fifth year students covering the fundamental principles underlying the use of X-ray in diagnosis and X-ray and radium in therapy. In the sixth year, in smaller groups, the students are taught the practical application of radiology. Diseases of children are covered by Dr. Rolph at the Hospital for Sick Children and diseases of the alimentary tract by Dr. W. H. Dickson at the General Hospital, where also diseases of the chest, skeleton and more general applications of X-ray, including therapy, are taken by Dr. Richards.

It is impossible to provide adequate facilities for post-graduate work until the building operations, at present in contemplation, are completed. The work in this field has therefore of necessity been curtailed.

No new or outstanding developments in radiology have been announced during the year, the chief advancement has consisted in perfecting refinements in diagnosis along lines already in use.

Members of the staff have contributed articles to journals, and Dr. Richards has delivered post-graduate lectures in Kingston and before the Lincoln County Medical Society.

The Banting and Best chair of Medical Research:—During the year attempts have been made to solve certain problems of cell growth. A study has been made of Rous chicken sarcoma, rat sarcoma and mouse carcinoma. The results cannot yet be reported.

Two graduates have worked on their own problems. Dr. A. W. M. White is reporting "A study of sarcoma of the fowl produced by arsenic and embryonic pulp". Dr. Brebner has been working on ultra filtrates.

Dr. E. J. King has studied certain problems of sulphur metabolism in conjunction with Prof. G. Hunter of the department of Pathological chemistry.

Dr. C. H. Best, who is remaining as an associate in this department, is working in the department of Hygiene.

Professor H. E. T. Haultain has almost completed the construction of a high-speed centrifuge with approximately ten times more centrifugal power than was formerly possible to obtain. The co-operation is acknowledged of Professor W. R. Graham of Guelph and Professor Klotz of the department of Pathology.

Anatomy:—The large number of students taking courses in anatomy has taxed, to the utmost, the accommodation in the Anatomical building. The dental students have continued to take their course under Dr. Watt in the dental building, where facilities are not good; it is hoped means may be found to provide for these students in the Anatomical department next year.

The course in surface anatomy has been most satisfactory. The X-ray apparatus has been utilized for instruction purposes more than formerly and,

it is hoped, under a special demonstrator it will be used to a still greater extent in future. Dr. Watt has conducted the optional course in gross anatomy. Dr. Linell has had charge of the courses on the anatomy of the nervous system. He has also given an option repetition course on brain dissection. Dr. H. A. Cates has given a course in Kinesiology to students from the School of Vocational Therapy and from the class in physical training of the School of Domestic Science. He has also taken an active part in the work of the St. George Nursery School, having charge of its anthropometric studies.

Dr. H. G. Wilson and Dr. A. Skinner have done excellent work in the courses on gross anatomy.

Miss Mary Tom, as research technician, has exhibited much technical skill in the production of preparations which has made possible much of the research which has been carried on. Dr. Guyatt, as Curator of the Museum, has shown much skill and ingenuity in mounting preparations for the museum. He has also assisted in the laboratory courses. Miss Grace Dowsley has done excellent clerical work in connection with the class records and the library.

Staff meetings have been held throughout the year on two afternoons a week at five o'clock. These have been devoted to reading and discussions of work on the border line between anatomy and other biological sciences such as heredity and anthropology. Certain meetings have included members from other departments, such as Surgery, Pathology and Psychology, discussing problems of an anatomical nature.

Physiology:—No fundamental changes were made in the teaching policy of the department during the year. The present difficulties of teaching experimental physiology in laboratories unsuited for the purpose will be overcome in future by the assignment of certain teaching units separately to Biochemistry and Physiology. This has been made possible by the transfer of Hygiene to the new building on College Street. Four of these units will be equipped with experimental tables. Two units at present used mainly for research on the second floor will be similarly equipped, giving in all six units, each of which will accommodate twenty-four students. By this means the teaching of practical physiology should be greatly improved. Each student will have a table and locker of his own, available at any hour during the teaching day, so that in his spare time he can continue his experiments, prepare his notes, reports, etc. More room will also be available for research, and this will relieve the considerable overcrowding of recent years.

After seven years in the department of Physiology Dr. J. M. D. Olmsted has resigned his position as associate professor, on being appointed professor of Physiology in the University of California. Dr. Olmsted has always proved a most competent instructor and an ardent investigator. While congratulating him on his appointment to such an important position in California, his resignation is received with deep regret.

Elsewhere we have noted the interchange of chairs between Professor Martin of the Stanford University, California, and the head of the department in Toronto. While in Toronto Professor Martin lectured on the physiology of muscular exercise and on general physiology. He also took an active interest in the research work of the department and in the journal club.

The researches carried on during the year had to do very largely with carbohydrate metabolism. Those participating in this work were as follows: Glycogen Metabolism: J. M. D. Olmsted. The relationship of the adrenal glands to calcium metabolism: N. B. Taylor and W. R. Caven. The metabolism of depancreatised animals particularly regarding the question of the derivation of sugar from fat: I. L. Chaikoff. The effect of hepatectomy on carbohydrate metabolism: S. Soskin. The effect of muscular exercise on respiratory exchange in small animals: J. Weber. The relationship between lactic acid production

and the disappearance of glycogen in mammalian muscles: W. W. Simpson. The influence of the pancreas and of adrenalin on muscle glycogen: Y. O. Choi.

Biochemistry:—Dr. J. Murray Luck having left to become assistant professor in Stanford University and Dr. George Eadie having resigned from the staff, while on leave of absence, it became necessary to meet the emergency which was created. This was done by the appointment of Mr. D. A. MacFadyen as an additional Fellow.

The distribution of the laboratory work between the second and third years has proved inconvenient, and the department has reverted to the former plan of giving all instruction in the third year. The instruction to dental students is being improved from year to year.

The number of students, in the combined Arts and Medical course, was greater than ever, and six of them elected, in their fourth year, the optional course in advanced biochemistry. Their work was excellent. Seventeen students of the Graduate School are at present enrolled in the department of Biochemistry: of this number twelve are candidates for the Doctor's degree and four for the Master's degree. Of the Ph.D. candidates three are taking biochemistry as their major subject.

Of the graduate students enumerated five have been engaged in research work either within or under the direction of the department. In addition four senior members of the staff and one voluntary worker (Dr. Henry Borsook) have conducted or directed original investigations. The work undertaken has been concerned in general with certain problems of ferment action, and particularly with the action of the ferment concerned in digestion. The progress made has been such that four papers have been published from the department during the current academic year.

Pharmacy and Pharmacology:—The character of the teaching has improved in the department. Dr. Lucas and Dr. Sparks have contributed, in a noteworthy fashion, to this result; the improvement in teaching is evidenced by the character of the students' note-books, which is much better than in previous years. The teaching of dental students has increased the work of the department and has curtailed the amount of time available for research. The increased accommodation and improved laboratories which will be available in future, as the result of the rearrangement of space in the medical building will greatly facilitate the work of the department.

In research work Dr. Lucas and Dr. W. Easson Brown have made an important study of nitrous oxide anaesthesia. The result will be recorded in a paper which is in press. Dr. Lucas has also made a preliminary report on the liver intoxication arising from the administration of brom-containing anaesthetics and has shown that they are split within the body in appreciable amounts. Dr. Sparks studied samples of digitalis grown in British Columbia demonstrating that these were as good as those produced anywhere else. He has published his results. In conjunction with the head of the department, Dr. Sparks has published an article on the use of digitalis in therapy. He has also been studying some experimental epilepsies and the effect of certain drugs in treatment. The head of the department has continued investigations on the peristaltic mechanism and made some preliminary experiments on respiratory stimulants, which should form the basis for more elaborate work.

Pathology and Bacteriology:—Certain minor changes have been made in the course both in Bacteriology and Pathology: an increase in the number of demonstrators and assistants and a rearrangement of the classes is necessary in the practical work. It is anticipated that the new building, which is contemplated, will assist in solving certain of these problems. It is quite impossible, in the present building, to keep pace with the expansion of work which has resulted from the many new demands made upon the department, such as the

increased service by members of the hospital staff: we have attempted to meet these as far as possible; increase in the staff and of the space available for diagnostic laboratories will bring a considerable improvement.

It is desired to improve the instruction in the fifth year in special pathology by spending more time in demonstrating gross material and the discussion of pathological case reports. During the past year instruction to students of the fifth year consisted largely of the discussion of phases of special pathology in a systematic fashion with the intention that students should familiarize themselves with the particular lesions by a study of museum specimens and autopsy materials.

The work of the sixth year, in participating in conference on important topics, has proved very successful. Each student has presented a thesis upon some topic in pathology: the character of this work has been good, the students showing initiative and interest, with evidence of thought and collateral reading, which is worthy of note.

Three fellows have assisted in teaching and each has carried on independent research. The results of this work are incorporated in a thesis offered for an advanced degree.

Dr. Margarite Price has carried on research in Tuberculosis under the auspices of the National Research Council: her results will be published. Each member of the staff has carried on independent research, the results of some of these investigations will be published. The department feels the need of proper animal quarters, those at present available being quite inadequate.

The department regrets the retirement of Miss I. E. Ruttan, who has for many years served so loyally as librarian. We note with pleasure the fact that the University suitably recognized her long service, on her retirement.

The head of the department returned from the expedition to Nigeria in November. He was there associated with the Yellow Fever commission under the auspices of the Rockefeller Foundation which had undertaken to investigate the extent of the endemic yellow fever on the West African Coast.

Pathological Chemistry:—A new departure in teaching has been the provision for a supplemental blood analysis class in the fifth year. This work is taught in the fourth year, but now increased opportunity is given to continue this important branch of clinical aid in the fifth year.

The department has undertaken the routine determination of basal metabolism rate for the department of Surgery. There has been collaboration with the department of Obstetrics and Gynaecology in the study of the toxaemias of pregnancy and allied problems. It is hoped to have similar work with the department of Psychiatry.

Valuable research work has been carried on by Professor C. Hunter and Dr. B. A. Eagles which has born fruit in the discovery of two hitherto unknown compounds in blood. The presence of one of these (ergothioneine) is probably responsible for the peculiar Van den Bergh reaction found in uremic serum. In connection with this discovery the department has been fortunate in possessing the co-operation of Dr. E. J. King of the department of Medical Research.

Hygiene and Preventive Medicine:—During the Christmas vacation of 1926, this department was moved into the new school of Hygiene building, in which the sections of Epidemiology and Vital Statistics and Physiological Hygiene of the school of Hygiene, as well as the University section of the Connaught Laboratories and the department of Public Health Nursing have quarters. The splendid accommodation and the facilities, thus rendered available, have greatly simplified the difficulties which have existed for several years past, because of the increase in students, graduate and undergraduate, from various faculties, colleges and departments of the University, for whom instruction in Hygiene and Preventive Medicine and Public Health has been provided.

In addition to undergraduate students there have been graduate students proceeding to the degree of Ph.D. and M.A., as well as those in the courses leading to the diploma of Public Health and Public Health Nursing.

As in previous years a summary of the research activities of the teaching staff of this department, is included in the report of the Director of the Connaught Laboratories which appears in the report of the President of the University.

Medical Jurisprudence:—Owing to the death of Dr. Silverthorn provision was made for continuing the work of the past session by appointing Dr. W. L. Robinson instructor in Medical Jurisprudence. The usual course in this subject was carried to completion. We have noted the appointment elsewhere of Dr. M. M. Crawford as head of the department. He will assume his duties next session.

Graduate Study:—It is recognized that practitioners, in various parts of the country, are anxious to keep closely in touch with advances in medicine, and that they have a claim on the Provincial University in this regard. The Faculty has opened the courses of instruction given to the higher years, to any graduate who cares to attend and thus refresh his knowledge. A standing committee exists whose duty it is to give advice to any graduate interested, as to the clinics and lectures which should be taken, and to confer with the heads of departments and individual teachers with the object of arranging a course in advance for each applicant. The laboratories and the clinics are available for the conduct of such courses and the library facilities are open to any graduate student.

Extension Lectures:—For the past few years lectures and demonstrations have been given by members of the staff, in all parts of Canada, to groups of practitioners. This work has been carried out for Ontario in conjunction with the Ontario Medical Association and for the rest of Canada, under the aegis of the Canadian Medical Association, which has been granted, by the Sun Life Assurance Company, an annual sum of $30,000 for the purpose. All universities in Canada, having Faculties of Medicine, have participated in this work, which has proved of the greatest possible value. During the past year members of the staff of the Faculty of Medicine of the University of Toronto have contributed 135 lectures, etc., under the Canadian Medical Association and 109 lectures, etc., in conjunction with the Ontario Medical Association.

Research:—Certain activities in research have been recorded, in this report, in speaking of the work carried on in various departments. A more extended statement, with greater detail, is contained in the report of the President of the University on Research. Suffice it to say that the amount of research work in the various laboratories and clinics is increasing year by year. Valuable contributions have been made, as indicated in the papers published in various journals, to the advance of scientific medicine. These results have proved of value in the care of the sick and in the control and prevention of disease.

(3) REPORT OF THE DEAN OF THE FACULTY OF APPLIED SCIENCE AND ENGINEERING

(C. H. Mitchell, Esq., LL.D., D.Eng.)

It is with satisfaction that I report the work in this faculty during the session now closing as being very gratifying. The academic work of staff and students alike has been maintained at a high standard.

It is also gratifying to observe that this year completes the cycle of fifty years since the original School of Practical Science was founded, and this faculty thus celebrates its Semi-Centennial. The development and growth of the faculty

during this time is amply indicated by the very prominent part which its graduates in all branches of engineering and applied science have taken in the development of the Province and Dominion generally.

The temporary decrease in the number of students which I have reported the last two years has now ceased and it is interesting to note that the first year enrolment in the past year exceeded that of the previous year by about twenty-five per cent. I consider this to be indicative of better general conditions in the country, signs of which have been evident for the past two years.

The graduating class this year numbered 103, and it is with satisfaction that I report that there were no failures in their annual examinations. In the other years the number of failures has uniformly been between fourteen and fifteen per cent. While this is a coincidence, its significance, especially with the first two years, confirms the belief that the quality and fitness of the students have increased.

While again I have to report with regret that a considerable proportion of the graduating class has had to seek employment outside of Canada, it has not been so marked as in the previous two years, and there are indications that the situation is now improving. I again wish to emphasize, however, the great necessity of organising a special method of bringing our graduates and possible Canadian employers into contact, with a view to retaining our graduates in this country and preventing this continued outflow.

The foregoing circumstances and the improvement of engineering conditions in Canada have been reflected in the difficulty experienced the past year in obtaining suitable instructors and demonstrators for the staff, and in securing promising research assistants. I am inclined to believe that even greater difficulty will be found in the coming session in this respect.

The crowded condition of some of our laboratories is making an acute situation with respect to accommodation. This is especially so in the Departments of Chemical Engineering and Mining Engineering. The Department of Chemical Engineering reports that "during the coming session laboratory accommodation will be taxed to the utmost", also that "the Faculty cannot now co-operate with the textile industry, much as it desires to do, for lack of space".

The effort to meet this crowding, and at the same time satisfy similar conditions that have arisen in the Department of Chemistry (Faculty of Arts), has necessitated a radical rearrangement of time-tables, whereby lectures next session are proposed to be given in the afternoon in many of the courses. While this will make considerable difficulty and dislocation in time-tables, the Council of this Faculty has agreed to this co-operative plan in the hope that it may prove of definite advantage to the University as a whole by utilising the equipment and university facilities in a more economical manner. A new departure in this respect is also being tried in this faculty during the coming session by having lectures during the autumn months commence at eight o'clock in the morning.

In considering the foregoing it must be kept in mind that in some departments instruction is given to students in other faculties, either along with or separate from those in our own. Especially is this so in the Department of Engineering Drawing, wherein instruction is also given to students in the Faculties of Arts, Forestry, and Dentistry, numbering in the early years over 50 per cent. of those in Applied Science.

In connection with research, as carried out in the School of Engineering Research, the members of the staff in this faculty have been very active and diligent throughout the past session. This is especially satisfactory as they have had to carry on this work superimposed on the regular work of instruction which, of course, is considered to take precedence of all else. There have been some researches carried out which will prove most useful in the industries and constructional problems of the country, and some of these are being continued with a view to more extensive application. The researches of this faculty are being

especially directed toward the most practical and useful application of science to our Canadian development. This will be observed by reference to the long list of researches enumerated in the attached statement, which contains a description of thirty-nine new researches in progress or already completed during the session by members of this faculty.

(4) REPORT OF THE DEAN OF THE ONTARIO COLLEGE OF EDUCATION

(Dr. Wm. Pakenham)

The registration of students in the High School Assistants' course whose homes are in the Western Provinces begins to decrease. The explanation lies in the expansion of the courses in the Western Normal Schools and in the creation of schools of education in the universities of British Columbia and Saskatchewan. The registration of Western students in graduate work in Education, however, increases.

The demands of the graduate work upon the time and strength of the regular staff have become excessive and readjustments must be made for the session 1927-28. It is hoped that Professor Sandiford may be released from much of the work he has done hitherto in the High School Assistants' course in order that he may make the graduate courses his major interest. Professor Coombs will then relieve Professor Sandiford in the High School Assistants' course.

(5) REPORT OF THE DEAN OF THE FACULTY OF FORESTRY

(Dr. C. D. Howe)

For the university year 1925-26 the distinctive stage in advance for the Faculty of Forestry was the occupancy of the new building provided by the University and the Government. It continues to be an inspiration and stimulus to the teaching staff and students.

For the university year 1926-27 the outstanding stage of advance in forestry was the enunciation of a definite forestry policy for the Province on the part of the Government and the publicly announced intention of seeking the co-operation of the Faculty of Forestry in carrying it out. The Dean has been appointed Chairman of the Forestry Board created by the Forestry Act passed by the Legislative Assembly, and three other members of the staff, Messrs. Dwight, Hosie, and White, are, in co-operation with the Provincial Forestry Branch, carrying on investigative work upon forestry problems.

In looking back to the conditions ten years, or even five years ago, one sees evidence of satisfactory advances in reference to the attitude of governmental organisations, private industry and the public in general towards the work of the graduates of this school. Ten years ago the forest fire protection of the province was in charge of so-called practical men. To-day most of the protection districts are directed by our graduates, and they have organised fire protection into a high state of proficiency. Ten years ago it was difficult to get a position for our men in the work of estimating timber and pulpwood. Now both the governmental organizations and the pulp and paper companies demand technically trained foresters for such work. The increased appreciation of the value of our men on the part of private industry is displayed by the fact that six of the eight graduates of the present year were taken by pulp and paper companies. The changing attitude of the public at large in regard to forestry

work is indicated by the increased demand for addresses on forestry from the members of the staff on the part of public organizations and service clubs, and the demand for articles by newspapers, magazines and trade journals. These have never been greater than in the year just past, and meeting these demands consumes an increasing amount of the time of the teaching staff.

We regard the increasing appreciation of the work of the Faculty largely to be due to the favourable impression our graduates have made upon their employers and upon the public in general, and this in turn we ascribe in large part to their training in the Faculty, to the fact that the small number of students allows practically individual instruction and that in their training we stress self-development and preparation for citizenship.

(6) REPORT OF THE FACULTY OF MUSIC

(Miss A. W. Patterson, B.A., Secretary)

On September 17, 1926, the Faculty of Music suffered a great loss in the death of Dean A. S. Vogt, who had been the Dean and presiding officer since the creation of the faculty in 1918. With the ability, courtesy, and tact which had distinguished him in other fields of musical endeavour and with a fairness and impartiality, which endeared him to his colleagues, he laid out the work of the new faculty along lines where he judged it would be most effective, and would best further the cause of music, which he always had at heart.

No appointment was made during the session to fill his place as Dean, and the President presided at the meetings of the Faculty Council.

During the session there were registered 46 students, as follows:

In the courses leading to the degree of Bachelor of Music:

First Year	10
Second Year	19
Third Year	14
Occasional	1

Two students registered for the degree of Doctor of Music.

The following series of lectures was given by members of the Faculty of Music:

HEALEY WILLAN, Esq., Mus.Doc., F.R.C.O.:
January 10—"The Harmonisation of Melodies."
January 24—"The Accompaniment of Melodies."
February 7—"Counterpoint in Combined Species."
February 21—"Modulation."

H. A. FRICKER, Esq., M.A., Mus.Doc., F.R.C.O.:
January 14—"Beethoven."
January 28—"Beethoven's Mass in D."
March 11—"The Orchestra."
March 18—"The Orchestra."

F. A. MOURÉ, Esq., Mus.Doc.:
January 17—"The Centenary of Beethoven."
January 31—"The History of Oratorio."
February 14—"Some Minor 18th Century Composers."
February 28—"Modern British Composers."

E. MACMILLAN, Esq., B.A., Mus.Doc., F.R.C.O.:
February 18—"Hymns and Hymn Singing."
February 25—"Tudor Church Music."
March 4—"Purcell as a Religious Composer."
March 25—"German Settings of the Passion."

A special series of lectures on Acoustics was delivered by Professor E. F. BURTON of the Department of Physics, Faculty of Arts:

March 7—"Production and Propagation of Sound by vibrational Motion."
March 14—"Scientific Determination of Standards of Pitch."
Marhc 21—"The Motion of Air in Organ Pipes"; "The Stationary Wave."
March 28—"The Physical Aspect of the Quality of a Musical Note."

There was again a considerable increase over the preceding year in the number of candidates for the Local Examinations of the Toronto Conservatory of Music, the enrolment for the season totalling 17,847 as compared with 16,331 for 1925-26. Entries for the year were distributed as follows: Piano, 11,769; Organ, 24; Singing, 478; Violin, 711; Violincello, 6; Sight-singing, 61; Theory (Rudiments, History, Harmony, Counterpoint), 4,798.

Dr. F. A. Mouré, University Organist and Lecturer on History of Music, again gave a very successful series of Organ Recitals in Convocation Hall, attended by large and appreciative audiences.

An illustrated lecture on "Hymns and Hymn Singing" was given by Dr. Ernest MacMillan, Principal of the Toronto Conservatory of Music and Lecturer on Church Music, assisted by the Choirs of Bloor Street Baptist, Metropolitan, Old St. Andrew's, St. Paul's, Timothy Eaton Memorial and Westminster Churches.

(7) REPORT OF THE DEAN OF THE SCHOOL OF GRADUATE STUDIES

(Professor J. Playfair McMurrich)

During the session 1926-1927 the number of students registered in the School of Graduate Studies was 365, an increase over the previous session of 35. Of these 286 were residents of the Province of Ontario, 12 of British Columbia, 11 of Manitoba, 10 of Alberta, 8 of Saskatchewan, 3 of Quebec, 3 of Nova Scotia, 2 of New Brunswick and one of Newfoundland. The United States were represented by 8 and the remaining 21 came from the Overseas Dominions or from foreign countries. The University of Toronto was responsible for the undergraduate training of 255, 88 came from other Canadian universities, 12 from other universities of the Empire and 10 from foreign universities. 89 held staff appointments in the University of Toronto.

The distribution of the students in the various departments, according to the subject chosen as the major study, was as follows: Anatomy, 1; Anthropology, 1; Architecture, 1; Astronomy, 2; Biochemistry, 6; Biology, 16; Botany, 16; Chemical Engineering, 4; Chemistry, 25; Civil Engineering, 2; Classics, 8; Education, 1; English, 46; Food Chemistry, 3; Forestry, 3; Geology, 8; History, 12; Household Science, 4; Hygiene, 3; Mathematics, 4; Medicine, 6; Metallurgy, 1; Mineralogy, 4; Pathological Chemistry, 2; Pedagogy, 44; Pharmacology, 1; Philosophy, 43; Physics, 22; Physiology, 8; Political Science, 21; Psychology, 15; Romance Languages, 18; Semitic Languages, 14; Zymology, 20.

The degrees sought are shown in the following table:

Candidates for the degree of Ph.D	88
Candidates for the degree of M.A	139
Candidates for the degree of M.D	6
Candidates for the degree of M.A.Sc	4
Candidates for the degree of M.Arch	1
Candidates for the degree of C.E	2
Candidates for the degree of Met.E	1
Candidates for the degree of D.Paed	44
Candidates for the degree of M.S.A	5

During the year 7 students fulfilled the requirements for the degree of Ph.D.; 72 those for the M.A. degree, 4 those for the degree of M.D.; 4 those for the degree of M.A.Sc.; 3 those for the degree of D.Paed.; and one those for each of the degrees of M.Arch., C.E., and Met. E.

The titles of the theses submitted for the Ph.D. degree were:

GEORGE GORDON BROWN,—The Perception of Depth with disoriented Vision.

GEORGE BROCKWELL KING,—Rabbinical Parallels to the Sermon on the Mount.

ALEXANDER BOYD MCLAY,—Some Researches on Line Emission, Absorption and Series Spectra of the Atoms of a Number of Elements.

WILLIAM CAVEN HUNTER MCQUARRIE,—Studies in Atomic Structure and Spectroscopy.

WILLIAM WESLEY SIMPSON,—Studies in Intermediary Carbohydrate Metabolism.

CARL WILLIAM SWEITZER,—Light Scattering in Aqueous Salt Solutions.

ALEXANDER HAMILTON WINGFIELD,—Twins and Orphans; The Inheritance of Intelligence.

The open fellowships provided for students of the Graduate School for the Ssession 1926-1927 have been renewed for the coming session by the generosity of the Canadian Pacific Railway, the Imperial Oil Company, Sir Edward Kemp, Colonel R. W. Leonard and the Robert Simpson Company. The following have been appointed to these fellowships, the Universities from which they graduated and the departments in which they will pursue their major studies being indicated:

J. Caspar, B.A., Alberta, Classics.
Miss E. G. Barnstead, B.A., Dalhousie, English.
Miss M. Kilgour, B.A. McMaster (Brandon College), English.
D. E. Calvert, B.A., British Columbia, English.
Miss A. E. Crowdis, B.A., Dalhousie, Philosophy.
J. E. Maynard, B.A., M.Sc., Manitoba, Geology.
A. J. V. Lehmann, M.Sc., Alberta, Botany.

Appointments to other fellowships open to graduate students have been made as follows:

The Alexander Mackenzie Fellowships: Miss Mildred Turnbull, B.Comm. Political Science; J. R. A. Pollard, B.A. (Sask.), History.

The James H. Richardson Research Fellowship in Anatomy: W. T. Grant.

The George Brown Memorial Scholarship: T. A. Sweet, M.B.

The Alexander McPhedran Fellowship: R. F. Farquaharson, M.B.

The Ellen Mickle Fellowship: H. Borsook, Ph.D., M.B.

The University of Toronto War Memorial Fellowship: Miss L. H. Cotton, M.A.

The Ontario Government Fellowships for Research in Agriculture were held during the year by J. C. Jack, M.A., and R. A. McKenzie, M.A.

The Education Fellowship was held by A. H. Wingfield, B.A.Sc., Ph.D.

Two noteworthy events have occurred during the year. The degree of Master of Science in Agriculture has been established and the courses of study leading thereto have been placed under the jurisdiction of a conjoint committee composed of members of the Council of the School of Graduate Studies and others chosen from the members of the staff of the Ontario Agricultural College. Arrangements have also been made with the Ontario Agricultural College whereby the admirable equipment and facilities of that institution may be utilized by students of the School of Graduate Studies, who may desire to pursue investigations of scientific problems pertaining to Agriculture, in connection with their studies leading to the degree of Ph.D. or M.A.

Furthermore there has been established a degree of Master of Science in Dentistry and the regulations governing the courses leading to this degree have

been placed under the control of the School of Graduate Studies. It is hoped that the establishment of this degree and that of M.S.A. will have a beneficial effect in stimulating graduate studies in the sciences pertaining to Dentistry and Agriculture.

Attention may also be called to the pressing need for additional open fellowships or scholarships for individuals who desire to pursue graduate studies. At present seven such fellowships are available, and for these there were this year no less than thirty-one applicants. It is unfortunate that so many students, desirous of entering the field of productive research or scholarship, should either have been prevented from doing so through the lack of a relatively small remuneration during their period of graduate study, or should be forced to seek this remuneration in foreign universities.

(8) REPORT OF THE DEAN OF THE FACULTY OF DENTISTRY

(*Wallace Seccombe, D.D.S.*)

The past year has been one of marked progress in the further correlation of the Faculty of Dentistry with the other faculties and departments of the University. There is a feeling of entire satisfaction throughout the dental profession with the outcome of the transfer of the School of Dentistry and, within the Faculty itself, complete confidence that the development of dental science, research and education will go much further within the University than could have been possible otherwise.

Registration

For the first time since the Great War, the classes this session are all of uniform size, about 60 in a class, the total registration being 303 in the five years. There was a decrease of 16 in the total registration from the previous year.

Changes in Departments

There were very few changes during the past session. Dr. C. Alvin Snell was appointed to the Department of Periodontology to relieve Dr. Harold K. Box of lectures in the fourth year, and we regret to record the resignation of Dr. J. W. Ingram, Professor of Dental Anatomy, at the close of the session.

New Degrees in Dentistry

During the year the Senate passed the necessary statutes for the establishment of the degrees of Bachelor of Science in Dentistry and Master of Science in Dentistry, the former requiring one year of work in addition to the regular course and the latter two years. It is expected that these degrees will stimulate the interest of both undergraduates and graduates in research work, the effect of which will be to raise the status of Dentistry and improve the quality of dental health service being rendered the public.

Along with the establishment of these degrees there is being developed a research programme that will link this work with the teaching departments and provide research fellowships for those with special aptitude for research. The University is taking the lead in this development but it is to be hoped that the profession itself will contribute its own share and in addition will interest public-spirited citizens that the claims of the University and of dental science may not be overlooked.

Graduate Service

There has occurred further development during the past year in Graduate Service. This service involves extra-mural lectures, of which 36 were given throughout the Province of Ontario during the session, special effort being made to reach the outlying districts of the province.

The annual course for dental practitioners was held for one week, September 13th to 18th, 1926. There were 28 dentists in attendance, 16 Canadian, 1 from England and 11 from the United States. The course is designed to meet the need of general practitioners who may desire to refresh their knowledge and become more familiar with the advances of recent years in important branches of dentistry. Arrangements are under way to hold a similar course this September from the 12th to 17th.

A new catalogue of the combined Faculty and Harry R. Abbott Memorial Libraries has been issued and provision has been made that graduates may obtain library books by mail under the usual conditions.

Graduates have been taking increasing advantage of the opportunity offered to consult the Faculty regarding obscure or difficult cases upon which they may desire advice upon diagnosis and treatment, and a suitable Case History Chart has been distributed for this purpose.

Training School for Dental Nurses

Fourteen young women were admitted to the Dental Nurses' course in September, 1926, being registered as "occasional" students. All successfully completed the course with creditable standing and graduation exercises were held on June 1st in the Dental Building, when the diplomas were presented by the Royal College of Dental Surgeons of Ontario.

Carnegie Report on Dental Education

The Carnegie Report on the Study of Dental Education by Dr. Wm. J. Gies has just been issued. It is a 700-page volume covering an exhaustive, non-technical study of dental education, and containing many data regarding the dental schools of Canada and United States. Any member of the University staff who is interested may obtain a copy upon application to the Carnegie Foundation for the Advancement of Teaching.

(9) REPORT ON RESEARCH

Anatomy, under Direction of Professor J. P. McMurrich

Dr. McMurrich has completed a study of the evidence bearing upon the evolution of the human foot to be obtained from the arrangement of the plantar muscles in man and the other primates. A note giving the results is now in press in The American Journal of Physical Anthropology.

Dr. Piersol, in collaboration with Mr. P. M. Bayne, has continued the study of the terminal bronchi in the lungs of human embryos of the later months of development. This investigation is now nearing completion.

Dr. Watt, as occasion offered, has continued his studies of the processes of calcification and ossification. His observations have been carried out along three main lines. 1. An investigation of the process of calcification occurring pathologically in various tissues. A paper embodying the results of this study is in press in the Archives of Surgery. 2. A study of the process of calcification of cartilage that normally precedes bone formation. A note on results obtained was presented to the Royal Society of Canada. 3. A determination of the quantity and location in the body of calcium salts available for the formation and growth of new bone. In this connection he is collaborating with Dr. N. B. Taylor of the Department of Physiology on the effects on the skeleton of the administration of parathyreoid extract and with Professor A. Hunter on the effect of experimentally produced rickets on the calcium content of the white rat.

Dr. Linell has continued his studies on the nerve supply of voluntary muscle, and, with Dr. H. H. Burnham, on the experimental production of otitis media and labyrinthitis. This latter study is now ready for publication. In collaboration with Dr. Mary I. Tom he has continued a study on the differential staining of neuroglia and its application to the differentiation of the various types of gliomata and has also studied the histological structure of the pituitary body in health and disease. He has, in addition, assisted in the studies carried on by Miss C. Helen Craw and Dr. H. A. L. Skinner detailed below.

Dr. H. A. Cates has continued the study of the nerves supplying the muscles of the lower limb and has begun a series of anthropometric studies of the children attending the St. George Nursery School.

Dr. H. G. Willson has completed an interesting investigation on the question of the occurrence of post-natal development in the human lung. His results are now ready for publication.

Dr. Mary I. Tom has collaborated with Dr. Linell in investigations mentioned above.

Dr. Guyatt has continued his studies in physiologica loptics.

Dr. H. A. L. Skinner has carried on an investigation of the microscopic anatomy of the auditory nerve with reference to the aetiology of acoustic neuromata, in connection with which he has also studied the relations of the meninges to the other cranial and spinal nerves.

Dr. M. J. Wilson continued his studies on the structure of the gall bladder and is preparing his results for publication.

Miss C. Helen Craw has made a study of the reflexes of the Skate, and the results are now in press in the Journal of Physiology. She has also completed her studies of the arrangement of the cells of the ventral horn of the spinal cord and in connection with this has investigated the course of the axonal processes of these cells to their point of exit from the cord.

Biochemistry, under direction of Professor A. Hunter

In addition to continuing, and in several new directions extending, its previously reported work upon (1) proteins and (2) enzymes, the Department of Biochemistry has this year undertaken, in co-operation with the Department of Medicine, studies of (3) the inorganic salts and water concentration of the body and (4) the metabolism of the blood pigments in health and disease.

The several investigations coming under one or another of these general heads are detailed below. They have been conducted in part under the immediate direction of Professor Hunter, in part under that of Professor Wasteneys.

Mr. Dauphinee has made further studies of the rate at which arginine is liberated in the tryptic digestion of various proteins. The results show that different proteins yield in this process different and characteristic fractions of their total arginine content; and they afford therefore a new method of gaining some insight into the structure of the protein molecule. It is quite clearly indicated that arginine may be linked in at least two different ways, and an endeavour is being made to learn of what nature its linkages may be.

Messrs. Bryant and Collier have conducted experiments upon the repeated action of trypsin, which have shown pretty conclusively that the enzyme can hydrolyse any particular protein only to a definitely limited extent. Once that limit is reached even a large excess of enzyme has no further effect.

Mr. Collier has begun an investigation of the manner in which the action of the enzyme arginase is affected by the products of its activity.

Miss McFarlane has completed her investigation of the progress of the hydrolysis of albumin by trypsin. In this hydrolysis the protein

is split much more slowly than it is by pepsin, but into much simpler products. There is a remarkably small yield of proteose which, with pepsin, comprises the largest fraction. Miss McFarlane is now engaged in a similar investigation of ereptic hydrolysis.

Miss V. E. Dunbar has been studying the relation of the rate of peptic hydrolysis to the hydrogen ion concentration. She has discovered in some proteins, although not in others, a correspondence between the ionisation of the protein as indicated by its titration curve and its rate of hydrolysis. She is now engaged in the investigation of methods of preparing purer proteolytic enzymes for use in future investigations.

Dr. A. M. Goulding has completed a study of the hydrolysis of cyanic acid. He found that the hydrolysis was markedly inhibited by the presence in neutral or alkaline solutions of proteins or their simpler derivatives. In the presence of such substances much larger amounts are obtained of urea than of ammonia, a result which is the reverse of that observed in their absence. This supports the suggestion of E. Werner that cyanic acid is the immediate precurser of urea in the animal body.

Mr. A. D. Barbour has continued his study of glycogenolysis in connection with the larger question of glycogen synthesis. He has succeeded in isolating in a fairly pure condition what appears to be the one product of the hydrolysis. This is a sugar of undetermined composition, and is definitely not glucose or any known disaccharide. These investigations may throw considerable light on the structure of the polysaccharides.

Mr. D. A. MacFadyen has studied the relation of peptic synthesis of a number of proteins to the hydrogen ion concentration of the peptic hydrolysates. He found that in every case the optimum $C_H+$for synthesis was practically identical, *i.e.*, in the immediate neighbourhood of pH = 4.0, although the isolectric point of these proteins varied considerably. He has also been engaged in the study of the kinetics of urease action. A hitherto unnoticed variation in the efficiency of the enzyme with its concentration has been discovered and is still under investigation.

Drs. Borsook and Maltby have attempted to establish the normal range of variation in the concentrations of inorganic salts in blood and urine. This was preliminary to a study, already commenced, of the changes characteristic of certain pathological conditions.

Drs. Borsook and Farquharson have solved successfully the problem of stabilising uroblinogen in urine. This will enable them to undertake a study of its excretion under various normal and pathological conditions.

Biology, under direction of Professor B. A. Bensley

Entomology: Professor E. M. Walker, Odonata of Canadian Cordillera, head capsules and cephalic muscles of *Grylloblatta*, growth stages of *Somatochlora*, Oniscoidea of Canada. Supervision of investigations by graduate students; W. E. Steenburgh, cephalic muscles of primitive insects; Miss Alfreda Berkeley, musculature of *Pandalus danae*. Miss N. H. Ford, studies on *Grylloblatta*.

Marine Biology, under supervision of Professor A. G. Huntsman and Dr. A. H. Leim: D. H. Hamly and W. S. Hall, temperature and salinity tolerance in trout eggs; A. W. Needler, age determination and food studies of haddock; Miss V. M. Davidson, temperature and other factors in growth of diatoms. Dr. Leim, abundance of smelt larvae in Magaguadivic river, summer plankton of Grand lake, investigation of shad statistics, effect of Mott lake water on development of whitefish and trout eggs, physical conditions in Chamcook lake.

Limnobiology: Professor J. R. Dymond, studies on the trout of Canada, the genus *Leucichthys* in Lake Ontario (in conjunction with A. L. Pritchard). Mr.

W. J. K. Harkness, further studies on the growth and propagation of the sturgeon. Supervision of graduate investigations, J. L. Hart, environmental factors in development of whitefish; A. L. Pritchard, growth and distribution of cisco species in Lake Ontario; D. S. Rawson, bottom fauna of Lake Simcoe.

Genetics: Professor J. W. MacArthur, experimental rearing of certain root crops, fowl, and linkage studies of tomato at the Ontario Agricultural College, Guelph, Ont. Abnormal human heredity. Partial supervision of graduate work at Guelph; J. C. Jack, fertility and other factors in fowl eggs; R. A. McKenzie, mortality factors in winter farrowed pigs.

Experimental Biology: Professor MacArthur and Professor W. H. T. Baillie, effects of light intensity and other factors on metabolism of sexes in *Daphnia magna*, sex differences in mortality and metabolism in *Daphnia*.

Comparative Anatomy: Professor Baillie, studies of joint surfaces, muscle attachments, developmental defects. Professor E. H. Craigie, vascularity of elasmobranch and chimaeroid brains; supervision (with Professor Linell, Anatomy) of graduate investigation of L. A. Smith, mitral and granular cells in albino and wild rats.

Fauna: Mr. L. L. Snyder and Mr. J. L. Baillie (Royal Ontario Museum of Zoology), distributional peculiarities in birds and mammals.

Botany, under direction of Professor J. H. Faull

I. Cryptogamic Botany, Mycology, and Pathology.
(Under the direction of Professor J. H. Faull.)

Faull, J. H.

1. Morphology, Biology, and Phylogeny of the Pucciniastreae. (In press.)
2. Red Stain of Jack Pine. Researches are in progress bearing on utilisation of vast amounts of defective pine, and of discovering the principle of control by forestry practice.
3. Studies on various crown diseases of balsam in completion of a comprehensive survey of the diseases of this host.
4. A beginning has been made on spruce diseases. Field studies during the summer of 1927 are being made on the nature, etc., of the trunk diseases.

Faull, J. H. and W. R. Watson

5. The taxonomy and biology of various species of the rust genus Milesina.

Faull, J. H. and G. D. Darker

6. The taxonomy and biology of various species of the rust genus Hyalopsora.

Faull, J. H. and E. H. Bensley

7. The taxonomy and biology of various species of the rust genus Uredinopsis.

Faull, J. H. and G. G. Cosens

8. Research on a very destructive disease of coniferous nursery plantation stock. This involves a determination of the fungal agent—for it proves to be a fungus disease, its life history, and means of control. This work is being carried out in co-operation with one of the Pulp and Paper Companies.

Hunter, L. M.

11. A comparative study of *Melampsora Abieti-Caprearum* (on European fir), and *M. americanum* (on American firs).
12. Comparative studies of the pycnia of rusts.

Bensley, E. H.

13. Biological studies on the Osmunda fern rusts of balsam.

Van Camp, J. L.

14. Investigations on the Chrysomyxa rusts.

Mounce, Irene

15. The Biology of *Fomes pinicola*. (Practically completed).

II. Plant Physiology.

(Under the direction of Professor G. H. Duff).

Duff, G. H. and H. N. Racicot

16. Studies of Growth in *Phaseolus vulgaris*.

Chapter I. Quantitative relations between the organs of the normal plant and in plants with artificially reduced leaf. Area: Exceedingly interesting correlations have been observed which indicate the nature of the internal factors governing the rate of growth of the leaf.

Duff, G. H.

17. Studies of Growth in *Phaseolus vulgaris*.

Chapter II. The effect of the alternation of generations upon the growth relations of the plant. An attempt is being made to discover with precisely what stage in the development of the flower certain characteristic changes in growth rate are correlated.

Chapter III. The effect upon subsequent growth relations of the intensity of certain factors during germination. Observations so far have concerned themselves mainly with temperature.

18. Metabolism of excised roots in artificial culture media. The rate of growth and utilisation of sugar by excised roots growing in artificial culture media have been determined in the presence and absence of certain forms of organic nitrogen. A first approximation has been made to a satisfactory method of measuring the rate of respiration under the same conditions.

III. Phanerogamic Botany, Genetics and Plant Breeding.

(Under the direction of Professor R. B. Thomson).

(*a*) *Anatomy and Experimental Morphology.*

Hart, N. C.

19. The origin of resin canals in the wood of the pines.

Reed, Miss E. R. L.

20. The anatomy of the seedling of Araucarians.

Thomson, R. B. and Reed, Miss E. R. L.

21. Tangential Pitting.

22. "On the Origin of Root, Stem and Leaf, and the Seed Habit Features of the Vascular Cryptogams." (Paper in preparation).

Thomson, R. B.

23. "The Evolution of the Seed Habit in Plants." (Paper in preparation).

Thomson, R. B. and Sifton, H. B.

24. Wound reactions of *Sequoia*, *Abies* and *Larix*.

The determination of the season of maximum response to wounding. The stimulation of resin production by chemical means.

(*b*) *Taxonomy.*

Watson, W. R.

25. Identification of Wrangell Island Plants (Crawford Collection). (Completed).

26. Collection and Identification of Ontario Flora. (Timagami, Bruce Peninsula and local).

27. Collection and Identification ofCanadian Flora of Rocky Mountains and Eastern Canada. (In association with Dr. M. O. Malte, Chief Botanist, National Herbarium).

(*c*) *Genetics and Plant Breeding.*

Bird, J. N.

28. Genetics of the shape and colour in radishes, etc. (Completed).

Strong, W. J.

29. Genetical Studies of the Cucumber. (Experimental work being done at Vineland).

The work on *Linaria* at Toronto has had to be discontinued on account of the lack of facilities.

IV. Plant Oecology.

(Under the direction of Professor H. B. Sifton).

Sifton, H. B.

30. A paper "On the Germination of Seeds of *Spinacia oleracea*, L., at Low Temperatures", finished in December, 1926, was accepted by *Annals of Botany*.

Sifton, H. B.

31. On Spinach Seed: This year the work centred on the structural characteristics of the fruit and the causal relationship between these and temperature requirements for germination. In establishing a correlation between structure and temperature requirements a new viewpoint in plant anatomy has been gained. The results obtained are stated in the publication.

32. On the effect of alternating temperatures on seed germination: Experiments have been begun with seeds that require alternations of temperature during the germination period. An attempt is being made to discover the cause of this peculiarity. Additional apparatus is required for the completion of the research. The anatomy of these seeds is at present being investigated.

33. On the influence of light on germination: An investigation of light-sensitive seeds has been begun in collaboration with Mr. Wright of the Dominion Seed Laboratory.

34. On the influence of pre-soaking on germination: Work is in progress on the weakening effect on certain seeds produced by soaking in water before planting.

35. On impermeable seeds: The impermeability of certain leguminous seeds to water has been a problem of considerable practical importance. Observation of this condition in beans has indicated some new and interesting facts. The genetics of the condition is being investigated and an anatomical study of the seed coats has been begun, to be supplemented by microchemical studies.

36. Wound reactions and resin tissue: Work along this line with *Abies* and *Tsuga* is being continued with Professor R. B. Thomson.

V. Plant Pathology.

(Under the direction of Professor L. C. Coleman).

Coleman, L. C. and R. F. V. Cooper

37. Dead Arm of Grapes caused by *Cryptosporella viticola*, Shear. This is a serious disease of grapes which has been increasing in importance during recent years and is undoubtedly causing serious losses to the grape growers of Ontario. Investigations were commenced in June 1926. New light has already been thrown upon the modes of natural infection which should lead to much more satisfactory means of control than have been practised in

the past. The work is being continued both on the scientific and practical sides. A short popular account of the disease has been prepared for inclusion in a bulletin on Grape Culture which is being issued by the Provincial Department of Agriculture.

Forward, D. F.

38. Brown Patch of Golf Greens. This is a serious disease of grass on golf greens which has become recently important in Canada and the cause of which has not yet been definitely ascertained. Isolation and inoculation work are in progress.
39. Carnation Rust caused by *Uromyces caryophyllinus* (Schrank) Wint. This is the most serious disease of Carnations as grown in greenhouses in Ontario. The investigation is the first of a series planned to embrace the more important diseases of greenhouse plants.

Willison, R. S.

40. Club root of Turnips caused by *Plasmodiophora brassicae*, Wor. While this important disease of cruciferous plants has been fairly extensively investigated in the past, this has not been done with reference to the turnip as a host plant. It is hoped that the investigation will reveal interesting and important information as the parasite host relationships of this important disease.
41. Downy Mildew of Lettuce caused by *Bremia lactucae*, Reg. An investigation of this disease has been commenced and will be continued if time and opportunity permit.

Note.

Field Laboratory for Plant Pathology at the Provincial Horticultural Experiment Station, Vineland Station, Ontario.

The work in Plant Pathology is being carried on in close association with the Provincial Department of Agriculture. To facilitate it a field laboratory has been opened (in May 1927) at the Provincial Horticultural Experiment Station. This will provide excellent opportunities for investigation work during the summer for both staff and graduate students. In addition to a fairly well-equipped field laboratory housed in two rooms in the administration building of the Station, the Director, Mr. E. F. Palmer, is providing field material and land and greenhouse accommodation to enable the carrying on of investigations on a fairly large scale. This arrangement for which we have to thank the Provincial Department of Agriculture and Mr. Palmer provides facilities for graduate training which would be impossible in the University itself. It should add greatly to the value of our graduate work and should at the same time enable us to assist in the work of agricultural improvement in the Province.

Chemistry, under direction of Professor Lash Miller

Twenty-eight students were engaged in research last winter under the direction of professors of this Department.

Of these, two were awarded the degree of Doctor of Philosophy by the University of Toronto, viz., Mr. C. M. Jephcott, M.A. ("Friedel and Crafts' Reaction: phthalic anhydride with pyridine and quinolin derivatives", Prof. F. B. Allan) and Mr. C. W. Sweitzer, M.A. ("Light scattering in aqueous salt solutions", Prof. F. B. Kenrick); while Mr. G. I. Hoover, M.A., was awarded the degree of Doctor of Philosophy by the University of Cambridge. The degree of Master of Arts was conferred on Mr. W. A. Irvine and on Mr. L. L. Perkin.

The following were the subjects of research:—

F. M. Archibald, M.A.:—The packing of extremely fine particles.

L. J. Bohn:—The so-called "salt error" in alkalimetric determinations of sodium carbonate.

K. H. Braithwaite:—Dependence of the properties of battery plates on the ratio of acid to oxide in the paste.
G. F. Brown:—The analysis of glass.
A. F. Charles:—Cis and trans isomerism in di-p-toluyl-ehtylene.
N. D. Clare, B.Sc.:—Supersaturation of gases in liquids.
A. F. W. Cole, B.A.:—Light-scattering by chlorine gas.
J. Cryer, M.A.:—Esters in the Friedel and Crafts' Reaction.
F. J. Farncombe, M.A.:—Adsorption of water on crystal surfaces.
W. S. Funnell, M.A.:—An all-glass gas-circulating apparatus.
J. H. Fraser:—Use of the thermionic valve to indicate the acidity of nickel-plating baths.
A. R. Gordon, Ph.D.:—Electrolytic polarisation in solutions of the copper chlorides.
W. E. Graham, M.A.:—Oscillographic comparison of the voltage over a carbon arc, with the light omitted, when the current is arbitrarily varied.
H. R. Hart, M.A.:—Thiophthalic anhydride with aromatic hydrocarbons and aluminium chloride.
G. C. Heald:—The thermionic valve as source of rapidly alternating current for the measurement of electrolytic conductivity.
G. L. Hoover, Ph.D.:—The adsorption of gases on thoria.
W. A. Irvine, B.A.Sc.:—The effect of a superposed alternating current on the rate of charge of the lead accumulator.
C. M. Jephcott, M.A.:—Friedel and Crafts' Reaction: Pyridine and quinoline derivatives, with phthalic anhydride.
W. H. Martin, Ph.D.:—The scattering of light in gaseous and liquid chlorine.
G. Mackinney, B.S.A.:—Effect of impurities on the consolute temperature in the system water-phenol.
M. J. Mulligan, M.A.:—Electrolytic deposits in glass.
L. L. Perkin, B.A.:—Supersaturation of calcium oxalate in various solutions.
J. W. Rebbeck, M.A.:—The evolution of gases during electrolysis of glass.
S. C. Sifton:—Purification of Bios II.
H. DesB. Sims, M.A.:—Purification of Bios I.
E. H. Smith:—Brom-derivatives of a-phenyl-ab-dihydro-coumarilic acid.
E. M. Sparling, M.A.:—A chloroform-soluble derivative of Bios II.
Miss H. Stantial, M.A.:—The formation of spores by normal yeast, and by yeast acclimatised to ammonium fluoride.
C. W. Sweitzer, M.A.:—Light-scattering in aqueous salt solutions.
R. C. Spooner:—Oscillographic measurement of the light from a carbon arc.

Food Chemistry, under direction of Professor C. C. Benson

The Research work carried on in this Department during the session 1926-1927 has been a continuation of the study of Vitamine B, methods of testing for its concentration and means for its purification.

One of the graduate students has collected a considerable amount of information in regard to synthetic diets for pigeons which simplifies the testing for the Vitamine, while a second student has been concerned with an investigation into the effects of various solvents which are used for the extraction of this substance.

Geology, under direction of Professor W. A. Parks

1. Professor A. P. Coleman (professor emeritus) continued his investigations of the glacial phenomena of Newfoundland and Labrador.

2. Professor W. A. Parks directed the usual expedition to the Red Deer river, Alberta, under the immediate leadership of Mr. Levi Sternberg; he also spent part of the summer investigating the formations of the Ordovician on Georgian bay. Professor Moore spent the summer in Europe and Professor MacLean was engaged in economic work in the Kirkland Lake gold field.

3. *By Professor Parks;*
   (*a*) The description of two new reptiles from the Cretaceous of Alberta—Champsosaurus albertensis and Albertosaurus arctunguis.
   (*b*) The stratigraphy and palaeontology of the Upper Ordovician on Georgian bay.

4. *Under direction of Professor W. A. Parks*
   (*a*) Miss Medeleine Fritz—The description of new fossil Bryozoa and Cephalopoda from the Ordovician of Ontario.
   (*b*) Mr. Helgi Johnson—Preliminary work on Collingwood fossils.
   (*c*) Mr. J. O. G. Sanderson—The stratigraphy and palaeontology of the Edmonton formation of Alberta.

5. *Under direction of Professor E. S. Moore*
   (*a*) Mr. I. W. Jones—Microscopic structure of Alberta coals.
   (*b*) Mr. F. W. Baker—The structure of mineral veins.
   (*c*) Mr. J. E. Maynard—The precipitation of iron ores.

6. *Under direction of Professor MacLean*
   (*a*) Mr. L. V. Bell—Contact metamorphism in the Kirkland Lake gold field.

Household Science, under direction of Professor A. L. Laird

During the session 1926-27 two graduate students have been engaged on research problems and both have been granted the degree of Master of Arts.

Miss H. R. Coatsworth has worked on the relation of diet to urinary acidity, continuing the work done by Miss A. E. Pope in 1923-24. Miss Coatsworth's work indicates that the normal dietary should contain a very considerable excess of base-forming foods, also that factors such as fatigue, nerve strain, etc., seem to counteract the favourable influence of alkaline ash foods on the acid-base balance of the body.

Miss M. A. Copus has planned one-dish meals (to provide half the day's requirement) for pre-school children and has tried them out on various children. By means of such meals, well-balanced diets can be practically assured while when more than one course is served, many children refuse part of the meal and thus may get a very one-sided diet and become malnourished. Miss Copus also investigated the diets served in three institutions for children.

Mineralogy, under direction of Professor T. L. Walker

During the vacation of 1926, Professor A. L. Parsons spent some weeks on field work in Ontario, visiting the old mining regions in Hastings, Renfrew, and Frontenac counties and the silver and gold districts of northern Ontario. Later in the summer some time was spent in southern British Columbia. On these expeditions the material collected was utilized as a basis of research and later transferred to the Royal Ontario Museum of Mineralogy for exhibition, reference or exchange with other institutions.

During the past session the following investigations have been in progress:

1. Miss Ferga Carmichael has continued her study of the rates of oxidation of ore minerals with particular reference to the influence of the presence of catalytic substances.

2. Mr. Wm. Gerrie, under direction, has studied the influence of sea water and other brines in the replacement of lime in limestone by magnesia.

3. Mr. D. E. Kerr-Lawson has made a study of the nature and history of pleochrois haloes in the biotite from Murray Bay, P.Q.

4. Professor Ellis Thomson, in following up his mineralographic studies of Canadian minerals, ores and mill-products, has paid particular attention to the minerals cohenite and chalmersite.

5. Professor A. L. Parsons has studied the dehydration of gypsum in the preparation of plaster of Paris.

6. In addition to general supervision and direction, Professor T. L. Walker and Professor Parsons have continued their study of Canadian minerals.

The scope of the work accomplished is in a measure indicated in the list of publications by the Staff in Mineralogy contained in this report. It is a pleasure to record the indebtedness of the whole staff to Mr. H. C. Rickaby, Research Assistant during the session 1926-27.

Physics, under direction of Professor J. C. McLennan

During the session 1926-27 there were thirty-six graduate students in attendance, of these seven were enrolled for graduate instruction, seven for the degree of Master of Arts, and twenty-two for the degree of Doctor of Philosophy. Seven students received the M.A. degree and three students the degree of Ph.D.

As heretofore advanced courses of instruction in Theoretical Physics were given to graduate students by all members of the professoriate. All the professors of the department have either directed research workers or have carried out investigations of their own. The investigations undertaken during the session are detailed below, and as will be seen, they were chiefly concerned with spectroscopy, with the utilisation of the low temperatures for studying electric conduction, with the crystal structure of solidified gases and vapours, with colloidal solutions, with the magnetic and fluorescent properties of substances, with surface tension and allied phenomena and with X-ray spectra and the analysis of spectra generally.

In the Low Temperature Division of the Physical Laboratory the hydrogen liquefier was rebuilt during the session and two gasometers, each with a capacity of 500 cubic feet were installed for the purpose of conserving the purified hydrogen and for liquefaction purposes.

A new compression pump was added to the equipment for liquefying helium and a number of modifications were made in the plant that have increased the efficiency with which it can be operated.

In the natural gas field recently secured by the Province for the extraction of Helium, additional wells are being put down, and in February gas was obtained in one well, with a daily supply of about 50,000 cubic feet, the helium content being about 0.8%. The drilling of a second well is likely to be completed in June.

In the division on Radiological Research there has recently been secured a powerful equipment for the operation of vacuum tubes under a potential of approximately 200,000 volts. With this apparatus intense beams of X-rays or of Cathode rays can be provided for a variety of investigations.

Acknowledgment should be made of the donation to the Laboratory by Mr. A. H. Campbell, Toronto, of a microscope constructed over 100 years ago. From an historical point of view the instrument is particularly valued by the Department.

The list immediately following gives a concise summary of various researches carried out in the Department during the session:

A. *Researches directed by Professor J. C. McLennan*

1. On the wavelength of the auroral green line in the oxygen spectrum by Professor McLennan and Mr. J. H. McLeod.

   In this research the radiation investigated was found to have a wavelength of λ 5577.341$\pm$0.004 IÅ clearly showing its identity with the radiation giving the wavelength λ 5577.35 A observed in the spectrum of the aurora.

2. On the analysis of spectra by Professor McLennan, Dr. A. B. McLay, and Mr. J. H. McLeod.

In these, analyses termed schemes, have been worked out for the arc spectra of the carbon-germanium, nitrogen-bismuth, and oxygen-tellurium groups of elements. New regularities have also been discovered in the spectra of other elements that have led to clearer views regarding the structure of atoms.

3. On the vacuum grating spectra of a number of elements by Professor J. C. McLennan and Mr. M. F. Crawford. In this investigation the spectra of hafnium, zirconium, tungsten, platinum, palledium, indium, rhodium, osmium, and ruthenium have been photographed and the plates are being measured up.
4. On the band spectra of hydrogen by Professor J. C. McLennan and Mr. W. T. Collins, and Dr. H. Grayson Smith.

   In this research the band spectrum of hydrogen was photographed when the discharge tube was at room temperature and when it was at the temperature of liquid air. Observations on the intensities of the bands in the two cases have confirmed the correctness of recent analysis of the band systems.
5. On the magnetic susceptibilities of the alkali elements by Professor J. C. McLennan, Dr. Richard Ruedy, and Miss E. Cohen, M.A.

   The elements sodium, potassium, rubidium, and caesium have all been found to be weakly paramagnetic without any marked variation with temperature down to $-150°$ C.
6. On the phosphorescence of solid nitrogen by Professor J. C. McLennan, Mr. H. J. C. Ireton, and Mr. K. Thomson, M.A.

   The phosphorescence spectrum of solid nitrogen has been shown to include two ranges of bands in the visible region, the one N_2 near λ 5230 Å and the other N_4 near λ 5945 Å. The group N_2 has been found to include eight bands and the group N_4 three bands. There is also a group of bands in the ultraviolet.
7. On the origin of the radiation λ 5577.341 Å in the oyxgen spectrum by Professor J. C. McLennan, Dr. Richard Ruedy and Mr. J. H. McLeod, M.A.

   In this research the wavelength in question has been shown to arise in all probability from a so-called "forbidden" electronic transition made possible by the occurrence of the transition in atomic electromagnetic fields.
8. On the electrical conductivity of metals at low temperatures by Professor J. C. McLennan and Mr. C. D. Niven, M.A.

   In this investigation the work has been extended to include the elements rubidium, chromium, and thorium.
9. On the photoelectric properties of potassium by Professor J. C. McLennan, Mr. C. D. Niven, M.A., and Miss F. M. Quinlan, M.A.

   In this research the photoelectric currents from a potassium cell kindly made for us by Dr. Ives have been investigated with light of different wavelengths down to the temperature of liquid hydrogen. The decrease in the photoelectric effect with lowered temperatures observed by Dr. Ives has been confirmed.

   Some experiments were also made with quartz photoelectric cells containing the metals cadmium and magnesium.
10. On the underwater spark spectra of various metals by Miss E. J. Allin.

    Arc lines were identified in the spectra of tungsten, tellurium, and thorium, but none were obtained with tantalum, selenium, carbon, and boron. Uranium gave a continuous spectrum without any emission or absorption lines as far down as λ 200° Å.
11. On the infrared arc spectra of Krypton and Xenon by Professor J. C. McLennan and Dr. Richard Ruedy, and Mr. A. B. McLay.

Experiments have been initiated with a view to determining the deepest spectral terms involved in the structure of the arc spectra of Krypton and Xenon. For this purpose the infra red spectra of these elements have been photographed by the use of neocyanine plates.

12. On the Zeeman resolution of the oxygen line λ 5577.341 by Professor J. C. McLennan, Dr. Richard Ruedy, and Mr. J. H. McLeod.

The attempt is being made to extend and complete the work initiated last year with a view to locating the wavelength λ 5577.341 Å in the term scheme provided for oxygen by McLennan, Grayson Smith and McLay.

13. On the absorption spectra of certain elements by Professor J. C. McLennan, Dr. Richard Ruedy and Mr. H. S. Wynne Edwards.

Exhaustive experiments were made in this investigation to identify the arc lines in the spectra of selenium and tellurium and in those of elements with high boiling points, such as tungsten, molybdenum, and tantalum.

14. On forbidden lines in the arc spectra of a number of elements by Mr. A. B. McLay and Mr. Anderson.

The forbidden lines $^2S_2 - {}^2D_{32}$ that involve an electronic transition in the atoms of either gold or copper between the deepest or most stable state and a higher lying metastable state of the atom were searched for in the absorption spectra of gold and copper. Although the wavelengths could be calculated with considerable accuracy by means of data obtained, no absorption lines were observed at the calculated positions.

15. On the crystal structure of condensed gases and vapours by Professor J. C. McLennan, Mr. J. O. Wilhelm, and Mr. W. G. Plummer.

In this research crystal structures were successfully worked out for carbon dioxide, oxygen, pentane, hexane, and octane, and ethylene. Progress has also been made with nitrogen, boron, and methane. A set of Davey charts was prepared for use with orthorhombic crystal systems.

16. On a study of Zeeman effects by Professor J. C. McLennan, Mr. A. M. Durdford, and Mr. A. B. McLay.

In this research much time and energy were spent in working out mechanical details with a view to improving the existing methods of studying Zeeman effects. Progress is now being made with the elements tungsten and platinum.

17. On the emission spectra of various elements in the Lower Quartz Region by Miss M. C. M. McDonald.

The emission spectra of the rare earths together with those of hafnium and niobium were photographed and their wavelengths down to λ 1850 were measured.

18. On the infra red spectra of various elements by Mr. H. J. C. Ireton, Miss M. E. Westman, Miss A. Keast and Miss F. E. Sullivan.

The spectra of the rare earths, and of metals of the platinum group were photographed up to λ 11000 Å by the use of neocyanine stained plates and the wavelengths were measured up.

19. On the fluorescence spectrum of tellurium by Professor J. C. McLennan and Mr. H. H. Blakeman.

In this investigation an attempt was made to identify the wavelengths in the spectrum of mercury that were the cause of the excitation of tellurium to the emission of its fluorescence spectrum.

20. On Low Voltage Carbon Arcs by Professor J. C. McLennan and Mr. J. H. Clements.

Some preliminary experiments were made to ascertain the resonance wavelengths in the spectrum of carbon I.

21. On the Spectrum of the Light of the Night Sky by Professor J. C. McLennan and Mr. W. Vance Ball.

In this investigation an attempt was made to photograph the spectrum of the light of the night sky. This spectrum, including the wavelength λ 5577 Å, had been repeatedly photographed at Pasadena. Though prolonged and numerous attempts were made at Kingston, Ontario, during the session 1926-27 we never succeeded in obtaining the slightest trace of any line spectrum.

B. *Researches by Professor E. F. Burton*

The immediate problems in hand are the influence of temperature on the stability of colloidal solutions and the variation of the scattering of light during coagulation of colloids.

A paper is being published in collaboration with Miss B. M. Reid, M.A.

C. *Researches by Professor John Satterly*

Surface Tension. The behaviour of a ripple in front of an ascending column of water (or of other liquids and solutions) has been studied, also the corresponding ridge on a vertical disc rotating half immersed in water.

This ridge also appears when a drop of oil is placed on a water surface and its behaviour in this case is being studied and correlated with the above.

D. *Researches by Professor L. Gilchrist*

1. Investigation of X-ray spectra by the method of visibility.

A continuation of the investigation on X-ray spectra for the development of formulae applicable to the cases of certain so-called crystals.

2. Resolution and the resolving power of optical instruments.

The preparation of a summary of recent work on this subject, with an outline of further extensions in spectral and spatial resolution which was presented to the American Optical Society, Rochester Branch, on March 8, 1927.

E. *Researches by Professor H. A. McTaggart.*

A research is being carried out on the behaviour of thin films of oil inside bubbles of air in water and on the formation of a dispersion of fine particles of oil consequent upon the absorption of these bubbles in the water.

Physiology, under direction of Professor J. J. R. Macleod

I beg to submit the following report with regard to the researches in my department during the past year. Most of these have had to do, either directly or indirectly, with the physiology of the carbohydrates and they may be classified in the following categories:

1. *Determination of the proper conditions for maintaining in healthy condition animals from which the pancreas has been removed.*

These observations have involved studies on metabolism, particularly with regard to whether the diabetic animal might be able to utilise as food certain forms of carbohydrate, or of chemical substances derived from them. If such utilisation could occur it would obviate the necessity of giving insulin to diabetic patients, and it would throw light on the nature of the action of this hormone. The most likely of the substances referred to are levulose, or fruit sugar, which is not far removed from glucose, and di-hydroxyacetone which is a decomposition product of glucose. Drs. Campbell and Markowitz have shown conclusively that these substances are not utilised in diabetes.

Numerous studies have also been made by Macleod and Markowitz showing that the relationship between the excretion of nitrogen and that of glucose by diabetic animals is not, as had been supposed, a constant one. The importance of this rests in the fact that it removes the main support for the current doctrine, that in diabetes the sugar comes exclusively from protein. It may be of interest here to note that there are at present in the laboratory two dogs from each of which the pancreas was removed over three and a half years ago. Both animals are in excellent nutritive condition because they are being injected twice daily with insulin and given raw pancreas with the food. Omission of the injections for one day is sufficient to throw the animal into the diabetic state, thus showing that the pancreas must be the only effectual source of this internal secretion in the animal body.

2. *The functions of the liver with regard to general metabolism.* By ingenious experimental methods the technique for which he learned in the Mayo Clinic, Dr. Markowitz has shown that an important function of this organ is the conversion of other materials, such as fats and proteins into glucose. The main paper on this subject is in press.

3. *Intermediary products of carbohydrate metabolism.* Mr. Chaikoff, with the collaboration of Mr. Gee of the department of Zymology, and also Dr. Supniewski, a Rockefeller travelling fellow, have investigated the possibility that acetaldehyde might accumulate in the body of diabetic animals. Although by the usual methods for the detection of this highly volatile material Supniewski did find that some accumulated, Chaikoff and Gee were able to show that this was derived by a secondary reaction and is therefore of no physiological significance.

4. *The physiological significance of the glycogen of the muscles as compared with that of the liver.* This problem has been attacked in various ways. Dr. Soskin has shown (in confirmation of Mann *et al.*) that agents which cause an increase in blood sugar in normal animals (such as anaesthetics and adrenalin) fail to do so in those from which the liver has been removed, thus indicating quite clearly an essential difference between the two forms of glycogen.

Mr. Simpson, who is a Research Scholar under the National Research Council, has shown that glycogen disappears from muscle immediately after death with great rapidity (within about 20 minutes) and that lactic acid quantitively takes its place, whereas in liver under the same conditions the glycogen disappears much more slowly and there is no accumulation of lactic acid. In the case of muscle also no free sugar accompanies the disappearance of glycogen whereas it does so in the case of liver.

Dr. Choi, who was sent here by the Severance Medical College in Korea, has shown, by using decapitate preparations, that the formation of glycogen in the muscles during the slow transfusion of sugar is dependent on the presence of the pancreas and that epinephrin does not cause it to break down, as it does in the case of the glycogen of the liver. This paper is in press.

5. *The dependence of muscular contraction on the presence of glycogen in the muscles.* Professor J. M. D. Olmsted and Mr. J. M. Harvey succeeded in ridding the muscles of frogs of their glycogen by the use of insulin and found that the muscles could still contract, almost as well as those containing glycogen.

6. *The behaviour of the free calcium in the blood in relationship to the parathyroid and adrenal glands.* Continuing his investigations on this subject Professor Taylor, in collaboration with Dr. W. R. Caven, has shown that the adrenal gland exercises some influence on the amount of the free (inorgnaic) calcium of the blood. A preliminary communication of this work has appeared.

7. *The cause for the increased disappearance of sugar brought about by the use of insulin in normal animals.* This work has been done in collaboration with

Mr. Orr and Barbour of the Insulin Standardisation Laboratory. By numerous observations on the standard white rat it has been shown that the injection of insulin increases glycogen formation in the muscles when very large doses of insulin are injected during the active absorption of carbohydrates from the alimentary canal. No such glycogen formation, on the contrary a decrease, could be detected when doses of insulin of the usual magnitude were given either to fed or to previously fasted animals. With Mr. Chaikoff's collaboration it has also been shown, by use of the respiratory cabinet, that there is no increased combustion of glucose when insulin is injected into rabbits absorbing large quantities of carbohydrate. These investigations indicate that the problem of the cause of disappearance of such large quantities of sugar from the normal animals as insulin brings about has not yet been settled. Under certain conditions there is no doubt that glycogen formation in the muscle and increased combustion play a rôle.

8. *The relationship of insulin to muscular exercise.* Mr. Weber, along with Mr. Hershey of the Insulin Standardisation Laboratory, attempted to study the influence of muscular exercise on the carbohydrate metabolism of standard white rats but, although the work was most carefully done, definite results could not be obtained on account of unforseen technical difficulties, the cause for which was discovered.

9. *The relationship between liver glycogen and increase in blood sugar.* Dr. H. S. Coulthard, working as a research fellow under the direction of Professor Olmsted, has contributed some important results showing the relationship of the glycogen content of the liver to the various forms of experimental diabetes other than that due to the removal of the pancreas. The methods he has used are a distinct improvement over those previously employed in the investigation of this problem and the relationships which he has already succeeded in bringing to light are of undoubted importance.

10. *The cause of death from electrocution, and the resuscitation of electrocuted animals.* Dr. R. W. Ian Urquhart first of all determined the exact strength (duration of current x mill amperes) of current necessary to cause death when electrodes were applied on two positions on the head. With currents just sublethal in strength, he found that the vital centres of the brain—which control the breathing, the heart beat, etc.—become paralysed for some time, but can be made to recover their formation by artificial respiration. This work was undertaken at the request of Mr. Wills Maclachlan and Dr. Gaby of the Hydro Electric Commission, who defrayed its expenses, and the results (published in a paper in the Journal of Industrial Hygiene) have a very important practical bearing.

Political Economy, under direction of Professor R. M. MacIver

I enclose herewith two reports, marked A and B, covering research done in the department during the present session. A relates to the completion of Dr. Innis' work on the fur trade, B to Professor Jackson's work in his study of the mining industry. Last summer, Professor Jackson was engaged in personal investigations into the mining industry in Northern Ontario, obtaining material to be worked upon in connection with the course on the mining industry given by him in the fourth year. This study will be carried further during the coming year, and I propose to have it supplemented by further studies in the same field to be carried on by Dr. Innis. The special research grant has made it possible for this work to be carried on; it has also enabled us to proceed with the publication of the two important works on the fur trade which Dr. Innis has prepared. It is hoped that, in a year or two, similar studies will be published on

the mining industry. In this way a service has been rendered to the business community which is beginning to be highly appreciated.

I enclose also C, a report showing the graduate theses presented in the department during the present session and also those in course of preparation.

A

I. The special research work completed by students in the fourth year in 1924-5. The theses of individual students were made available to the public. Keast's thesis on Fur Farming was mimeographed and also the combined results of the work done by Salter, Gowdy and Dougall. The mimeograph material has been published serially in the Seattle Fur Farm Magazine. Keast's has already been concluded and the first instalment of the second mimeograph set has appeared. Parts of other theses have appeared in various other fur magazines.

We are under heavy obligations to the University Extension Department for distributing and handling the material. The number of enquiries and other information from that department will be found on the attached sheet. A large number of inquiries have been made on special subjects, and this has led to co-operation with various government departments which has been advantageous to all concerned. Other indirect advantages have followed in the addition of numerous standard works on the subject to the Library.

The results of the theses have been worked over and are being published in two volumes under the auspices of the University Studies. The first volume on the present trade will be available to the public in June. The second volume on the history of the trade is practically ready for the press.

II. Placer Mining. In the summer of 1926-7 a reconnaissance was made of the possibilities of Yukon territory for special investigation. Elaborate notes on interviews were collected and material located, gathered and arranged for later study. Practically a complete set of photographs showing a history of mining processes was acquired and these have been used by the department in making a complete set of slides on the economic developments of the Yukon. In addition assistance was given to an honours student as a training in investigation and field work. The survey was sufficient to show the possibilities of this field and intensive work will be carried out at the earliest opportunity.

III. At this point it may be necessary to point out again that this work is still being carried out to some extent as a result of subsidies. The survey of the Yukon was met by the research fund to the extent of actual transportation expenses which is about one-half of the total expenses of a trip of that character, in spite of the most economical travelling. This outlay becomes more onerous to those engaged in research work, since it becomes impossible to take on other forms of remunerative work open to other members of the staff. The extent of this penalty is shown more clearly by stating that those engaged in research receive in actual salary less than the junior member of the staff. This problem will doubtless disappear after this year, and there is no real objection to the present arrangement but it is perhaps advisable to point out that it may become serious at a later date.

IV. It is proposed to carry out an extended investigation on the industries of the Canadian shield—mining and lumbering. These studies will supplement those on the fur trade.

Fur Trade

May, 1927.

Number of inquiries about Fur trade—315.
Number of mimeographed theses sent out
Keast—approximately.....250
Salter, etc., approximately....125

Number of times theses sent out

Keast..... 11
Fur Trade Farming
Gowdy..... 14
Production of Furs
Richardson..... 16
Personnel of the Fur Trade
Snyder..... 21
Manufacture of Furs
Simpson..... 6
Sales Organization of the Fur Trade
Littlejohn..... 11
Fur Trade of other Countries
Dougall..... 12
Government Regulation of the Fur Trade
Salter..... 8
Dworkin..... 12
prior to 1627
Vennels..... 10
1627-1663
Spragge..... 7
1663-1713
Bowman..... 10
1713-1763
Fleming..... 5
1763-1821
Black..... 3
1821-1869
Booth..... 4
1869-1900
Harris..... 9
since 1900

B

Students taking the special subject in fourth year Commerce and Finance (The Mining Industry) were divided into groups in the spring of 1927 with a view to conducting two or three preliminary investigations.

The first of these groups undertook the construction of an index of the prices of mining securities. Good progress was made until the opening of the new building by the Standard Exchange made the records for the time being inaccessible. Certain difficult questions of technique were, however, settled, and it is hoped that such an index will be made in the coming session.

The second group attempted in the same way to study fluctuations in mining costs. The problems of selecting and weighting the different items proved exceedingly difficult and this group has done little more so far than make certain preliminary plans.

The third group undertook to study fluctuations in the price of silver. The members of this group worked very thoroughly and results are promising. First of all a bibliography of the silver market was made after extensive reading. Secondly an attempt to analyse the post-war fluctuations in the price of silver uncovered the interesting possibility that there is a definite seasonal fluctuation based upon the monsoons. This result remains to be tested next year, when the pre-war fluctuations in the price of silver can be given the same analysis, and if sustained will obviously have considerable practical value.

Less progress was made than had been anticipated both because the difficulties proved surprisingly numerous and because of my absence in England during two months of the working year. Nevertheless these three inquiries are in a position to be carried on without delay next year, besides which it is to be expected that additional problems will be opened up.

In addition to the studies connected with the Mining Industry the class in Money, Credit and Prices undertook an analysis in detail of the monthly statement of the Chartered Banks over a period of seven years. Owing to my absence from February onwards, this was not completed in all its details. Nevertheless certain series were measured and corrected for seasonal fluctuation and when analysed fully should throw real light on the post-war banking problems of Canada.

C

Graduate theses presented in the department.

Beecroft, Eric Armour, B.A. (Toronto)
"Federalism and Sovereignty."
Bond, Leslie Bernard, B.A. (Toronto)
"The Disallowance of Provincial Acts in Canada."
Cotton, Laura Helen, B.A. (Toronto)
"Some Principles of Group Activity."
Djang, William Bei-Lwai, B.A. (Toronto)
"The Theory of the State and the Autonomy of the Church."
Hamilton, Catherine Roberta Wallace, M.A. (St. Andrews)
"Some Experiments in Workers' Education."
Perold, Gabriel Jan, B.A. (University of the Cape of Good Hope)
"Labour Conditions in the Gold Mining Industry of South Africa."

Graduate theses in preparation.

Gardner, William Harvey, B.A. (McGill)
"Tariff."
Graburn, Archer Lynn, B.A. (Toronto)
"The Fuel Problem of Canada."
Hall, Charles H., B.Com. (Toronto)
"Fidelity Suretyship."
Kemp, Hubert Richmond, M.A. (Toronto)
"Taxation in Canada."
Lowden, John Alexander, B.Com. (Toronto)
"Seasonal Unemployment in the Construction Industry of Canada."
Marshall, Herbert, B.A. (Toronto)
"Prices in Canada prior to 1890."
Stark, Harry Alexander, B.A. (Toronto)
"Attempts at Co-operation between Capital and Labour in Canada."
Wells, Dalton Courtwright, B.A. (Toronto)
"The Taxing Powers of Various Governing Bodies in Canada."

Psychology, under direction of Professor E. A. Bott

Professor Bott—Educability of binocular motor patterns.
" " —Analysis of the antagonistic muscle action involved in voluntary movements.
" " with G. G. Brown—Perception of depth with disoriented vision.
" " " Mr. G. Cosgrave—Relative legibility of type faces.
" " " Mr. C. N. Clark—Relation of pupillary aperture to binocular rivalry.

Professor MacPhee—Practical methods for the classification of public school pupils.
" " —Construction of a short Grade-Placement Scale for use in schools and clinics.
" " —Bibliographic study of psychological factors in the learning and teaching of Modern Languages.
" " with Miss J. A. Brown—Critical study of the Ferguson Form Board Series.
" " " Mr. K. Rogers—Study of the validity and reliability of intelligence test elements for use with university students.

Professor Blatz—A study of the behaviour of public school children—a description of method.
" " —Treatment of enuresis cases from the standpoint of habit training.
" " with Mr. W. B. Mumford—Psychological factors in the genesis of theft cases.
" " " Miss H. Keens—Emotional behaviour of pre-school age children.
" " " Mr. C. G. Stogdill—Establishment of criteria of brightness and dullness in the white rat by means of the maze and the problem-box.
Mr. S. N. F. Chant— Selection of taxi-cab drivers by mental and motor tests.
Mr. J. D. Ketchum—A study of psychological theories of social origins.

Report of the Committee of Experimental Research in Medicine

Dr. D. E. Robertson, Secretary.

During the past year the laboratories of the Committee of Experimental Research in Medicine have been kept very busy. Six hundred and five experiments were done, which required anaesthetisation and operation upon animals. These operations were conducted with meticulous care in the sterilisation and maintenance of an a-septic field, as any infection occurring in the wounds of experimental animals spoils the experiment. One hundred autopsies have been done on these animals, and microscopic sections have been made of ninety specimens.

The laboratory work, the preparation of the animals and the preparation of sections is all done by the Laboratory Attendant, Walter Cowan. He is giving his services in an enthusiastic manner, and each year finds that his tech nique is enlarging and improving.

The Committee have provided this year a full-time nurse, who is working in the Obstetrical Wards under Professors W. B. Hendry and V. J. Harding, upon the toxaemia of pregnancy. It is proposed to continue these services for another year, as the work is not yet completed.

In addition, laboratory facilities have been accorded to the following:
Dr. Costain—"Studies of Lymphatics."
Dr. D. E. Robertson—"Experimental Osteo Myelitis."
Dr. L. Robinson—"Circulation in the Spleen."
Dr. Paul Scott—"Experiments in the Eye."
Dr. A. B. LeMesurier—"Experiments in Blood Supply of the palate.
Dr. J. W. Ross—"Experiments of Diathermy."
Dr. Price—"Study of Tuberculosis in Rabbits."
Dr. W. E. Brown—"Experiments in Anaesthesia."

The Committee wish to acknowledge their indebtedness to the Department of Pathological Chemistry for the use of their rooms.

The School of Engineering Research

The progress of research under the auspices of the School of Engineering Research has been quite satisfactory during the past year, notwithstanding the difficulty that some departments have had in securing research assistants, due to the exceptional demand for our graduates in engineering positions.

Bulletin No. 7, containing detailed statements of the researches which have been carried to various stages of completion during the past year, is now in the press.

Department of Civil Engineering

Under the direction of Professor L. B. Stewart.

A method has been developed by which an engineer, with his ordinary instrumental equipment, may be enabled to measure a linear distance with a precision which will satisfy all professional requirements. The only instruments required by the method are a transit, a level and levelling rod, a steel tape and a thermometer. Approximate expressions have been derived for the various corrections that must be applied to a tape length, but the error involved in each has been shown to be very much smaller than the error of measurement. It is possible, therefore, that the method may be sufficiently precise to serve for the measurement of geodetic base lines. A paper dealing with this will appear in Bulletin No. 7 of the School of Engineering Research.

Under the direction of Professor P. Gillespie (with Karl Irwin).

A paper entitled "Charts for Stress Determination in Reinforced Concrete Chimneys," containing a series of graphs for the ready solution of problems involving stress in reinforced concrete chimneys due to weight, wind and temperature changes and combinations thereof, was prepared during the year.

With C. A. Hughes—An investigation is being made of gas and electric welding in the fabrication of structural steel. This is part of a programme drafted by a committee of the American Bureau of Welding representing American and Canadian interests, and has for its object the determination of the degree to which welding may supersede or supplement riveting in the fabrication of steel structures. The immediate programme involves the making and testing of nearly 400 individual welded connections.

Under the direction of Professor C. R. Young (with W. B. Dunbar and C. E. Lewis).

An effort was made to determine for a given type of tower the width of base which would give the greatest economy of material used. A considerable range of bases was investigated and the results reduced to the form of graphs. A paper embodying the results was published in the Canadian Engineer of August 17, 1926, and will appear in Bulletin No. 7 of the School of Engineering Research.

With W. B. Dunbar and H. J. A. Chambers—A model transmission tower was built to one-tenth size of regular tower and by means of a special gauge built for the purpose stresses due to loading in various members of the tower were determined. A check was made on the gauge by means of measurements taken with micrometer microscopes. The investigation was extended to determine the centre of torsion of the tower due to eccentric loading. The results are contained in a paper in the Canadian Engineer, May 31, 1927, and will appear in Bulletin No. 7 of the School of Engineering Research.

With W. B. Dunbar, H. J. A. Chambers, E. B. Allan—Framed structures simulating the panel of a transmission line tower were built and tested. Comparison was made with single angle members to determine the effective slenderness ratio of the former. This will appear in the Canadian Engineer and in Bulletin No. 7 of the School of Engineering Research.

With W. B. Dunbar—An investigation is being made of the effect of various factors on the tensile strength of structural rivets.

With W. B. Dunbar and the co-operation of the Sewer Department of the City of Toronto—An investigation is being carried out of the pressures existing in sewer walls at depths of 50 to 100 feet by means of previously calibrated Goldbeck pressure cells.

Under the direction of Professor G. R. Anderson (with R. J. McGrath and Miss E. G. MacGill.

An investigation is in progress of the "flicker" in incandescent lamps operating at 25 cycle current, with a view to the determination of the factors which influence this phenomenon, and possibly its elimination.

Under the direction of Professor T. R. Loudon

Research has been carried out with the Photo Elastic method to determine the stress distribution in riveted tension members. This work has been carried on for the past two years and the results of this investigation will be ready for publication in Bulletin No. 7 of the School of Engineering Research.

A preliminary investigation has been made into the stress distribution in riveted plate girders to determine the effect of web stiffeners.

Department of Mining Engineering

Under the direction of Professor H. E. T. Haultain.

The development of an extreme high speed laboratory centrifuge and accessories has been carried out with the co-operation of Dr. F. G. Banting during the past session.

Under the direction of Professor F. C. Dyer.

The work on the refining of graphite from ores has been continued.

Under the direction of Professor J. T. King.

The investigation of cupellation losses has been continued and a new form of cupel devised.

Department of Mechanical Engineering

Under the direction of Professor R. W. Angus (with R. M. Robertson).

A research was conducted on the effect of water hammer in pipe lines, this being done by means of models. During this experiment a delicate instrument was devised for recording the pressure variations in the line. A number of valuable tests were made and this will be put into the form of a report very shortly.

A research was conducted on the loss at entrance to and in the suction pipe of hose on fire engines.

Under the direction of Professor J. H. Parkin.

Two studies have been made in connection with the strength computations of aircraft now being designed and built in Canada for Canadian service:

(1) The distribution of pressure over the Gottingen-387 Aerofoil with Square Tips has been measured over the full range of incidence for this aerofoil as a monoplane, and in three biplane combinations.

(2) An investigation of the aerodynamic characteristics of biplanes, composed of three well-known wing sections, in usual biplane arrangements has been made.

Preparations are now under way, including the calibration and adjustment of two special wire suspension roof balances, for a study, being made at the suggestion of the Department of National Defence, of the stability characteristics of the Canadian flying boat "Vedette." Information is lacking respecting the stability of flying boats.

The nature of the flow about the wing tips of certain aerofoils is now being investigated to secure information for use in the design of controls.

A study of the interference effects between wings and fuselage has been planned and measurements are about to be made. Interference effects of skiis and other accessories will also be investigated.

Under the direction of Professor E. A. Allcut.

An investigation has been made of the conditions existing in the exhaust pipe of a two-stroke cycle oil engine. A special apparatus was constructed for

taking samples of the exhaust gas during a period of 1/200th of a second at known points during the cycle. The results obtained proved that the usual method employed for obtaining samples of exhaust gas gives results which are considerably in error, and consequently the deductions made from the exhaust gas composition are similarly in error.

Correction factors for engines having different numbers of cylinders were worked out. An internal energy-entropy diagram was also worked out for nitrogen, and the temperatures obtained at different points in the cycle were calculated by its aid.

Two papers have been published—"Further Tests on Two-Stroke Cycle Oil Engine"—Proc. I. Mech. E., 1927; "Producer Gas for Road Traction"—Bulletin No. 6, School of Engineering Research.

Department of Architecture

Under the direction of Professor E. R. Arthur (with J. Ryrie).

Research work undertaken during the past year was a continuation of that begun the year before on the Early Architecture of the Province of Ontario. A great many houses and churches were photographed and measurements taken, from which drawings have been made. It has been found possible to trace national characteristics in the architecture of the different settlements in the Province whether directly English, from the United States, German or French. At present the Niagara Peninsula has been fairly thoroughly examined, and we have been as far east as Prescott and the Loyalist Settlements in Prince Edward County. Most of the best work in Ontario was built before 1840 and houses have been found as early as 1783.

In the Spring a brochure—Small Houses of the late 18th and early 19th Century—was published.

Department of Chemical Engineering

Under the direction of Professor J. W. Bain (with F. R. Manuel).

The study of the action of heat upon cellulose has been continued. Previous investigations have revealed the presence, among the decomposition products, of considerable quantities of a substance, or substances, which has not yet been identified. Difficulties in purification have been partially overcome, and it is hoped the final steps may be made during the next session.

The behaviour of cellulose when subjected to a temperature of 200° C. for hundreds of hours has also been investigated. A peculiar rhythmic evolution and absorption of gas has been observed in all cases and this will be further studied.

With J. B. Beck—An extensive fractionation of crude barium lignosulphonates from waste sulphite liquor has been carried on. The results of the first series led clearly to the conclusion that the lignosulphonic acids are more complex than has been suspected hitherto, and a second series of fractionations on a larger scale was undertaken. The final fractions of this latter set are now being examined by Mr. E. A. Smith, but no definite conclusions can yet be stated.

With S. Suzuki—A research on Sodium Potassium Carbonates has been in progress for a number of years, chiefly carried on by undergraduates. The results obtained during this session were so interesting that some final work was undertaken which resulted in the discovery of a new hydrate of sodium carbonate. This has been overlooked by all previous investigators, and in consequence the solubility data now current requires revision which will be carried out during the next session.

Under the direction of Professor M. C. Boswell (with J. G. Breckenridge).

The chief product of the action of free oxygen on dimethyl aniline in the presence of anhydrous aluminium chloride was isolated and analysed. This proved to be a dye of the triphenyl methane series, viz., the hydrochloride of the dye base, penta methyl tri amino tri phenyl carbinol. The dye base was found to pass gradually, by loss of a molecule of water per mol of base, into the imine base which was also analysed. This work will be published shortly.

With C. H. Bayley—Fusions of organic compounds with sodium hyroxide are commonly carried out in the laboratory and the factory. The mechanism of this reaction has been studied for several years in this laboratory not only because of the technical importance of the reaction but also because of the light which might be thrown upon the nature of the complex which alkali hydroxide forms with water, and thereby give some information of value to the general theory of solution. In view of the opposing views which are held as to whether water plays any part at all in these fusions, some crucial experiments were carried out which clearly demonstrated that, in these reactions, water is decomposed, and that the alkali hydroxide is a catalyst for this decomposition. The details of this investigation will be published shortly.

With A. S. Townshend—Aluminium oxide and thorium oxide are commonly used in the laboratory and the factory for catalysing reactions involving the splitting off of water, as, for instance, in the production of ethylene from ethyl alcohol. The mechanism of the reaction in the case of aluminium oxide was studied in this laboratory by H. M. Dilworth and a theory advanced to account for the reaction. This work has been further extended during the past year by work with thorium oxide. The variation in the extent of adsorption of ethylene with variation in concentration for thorium oxide carrying various known amounts of water was determined, and the dependance of the adsorption upon the water content was shown. This work is being continued.

With C. H. Bayley and H. M. Dilworth—The study of the mechanism of catalysis by platinum and nickel, which has been in progress for some time, is being continued with an improved apparatus.

Under the direction of Professor E. G. R. Ardagh (with B. Kellam).

A study has been made regarding the conditions affecting the rate of formation and the yield of certain phenylhydrazones. A paper containing the results will be published shortly.

With E. T. W. Bailey and L. A. Richardson—A study has been made of the determination of sulphate and of the properties of barium sulphate. The work will be published in the near future.

Department of Electrical Engineering

Under the direction of Professor T. R. Rosebrugh.

Among the problems arising out of the transmission of electric power is the mathematical treatment of the theory of transmission line net-works. A paper dealing with this subject was published in Bulletin No. 1 of the School of Engineering Research. An attempt to generalise as highly as possible a mathematical situation which arose in connection with this work has led to the development of a general theorem on quantic determinants. A rigorous proof was obtained for this theorem, which comprises, as special cases, the theorem on determinants by Kronecker, Scholtz and di Bruno. A paper dealing with this matter will appear in the Bulletin of the American Mathematical Association.

Under the direction of Professor H. W. Price (with V. G. Smith).

Automatic Control of Frequency—Certain unsatisfactory features of the apparatus developed in long continued operation. Means of correcting them have been found, and are now being constructed.

Seconds Clock of Highest Constancy—A siderial and a mean time clock are being constructed for long trial in the observatory by Professor Stewart.

Temperature Control—The problem has been found much more complex than at first appeared. Necessary apparatus has been designed and will, we hope, be in operation before long, from which final observations and data can be obtained.

Synchronous Motors—A method has been devised for photographically recording variations in angular velocity during each revolution of motors driving compressors. It is hoped to obtain data on actual drives in industrial operation.

Shunting the Grassot Fluxmeter—A theoretical study of the properties of the fluxmeter when shunted by non-inductive or inductive shunts, which disclosed very welcome extensions in the usefulness of fluxmeters. A paper is ready for publication.

Mathematical Study of Radio Frequency Amplification—Undertaken and completed independently by Mr. V. G. Smith. A quantitative study of properties of air-core interstage transformers and connected apparatus to evaluate best operating conditions, and results under those and neighbouring conditions. Two new and useful constants are derived, one for amplifying tubes, one for transformers. (Proceedings of Institute of Radio Engineers, June, 1927.)

Department of Metallurgical Engineering

Under the direction of Professor R. J. Montgomery (with H. P. Kimbell).

Part I—An investigation of the draft, temperature and combustion conditions in four commercial kilns burning building brick was made. This study showed certain errors in flue construction which increased the time and cost of burning.

Part II—Certain tests were made on samples of silica sand and kaolins from the Mattagami and Missinaibi rivers. The iron content of the sand, after washing and grading, was found to be high for the best grade of glass sand, but several sands are of a quality satisfactory for potters' flint. Some of the kaolin samples were of good colour and could be purified for commercial use while others were of only fair colour and of doubtful value.

(10) PUBLICATIONS

FACULTY OF ARTS

Department of Archaeology

McIlwraith, T. F.—*Recent Publications Relating to Canadian Archaeology and Ethnology* (Canadian Historical Review, vol. 7, No. 4, pp. 371-376).

Windle, Sir Bertram W.—*The Catholic Church in Its Reactions with Science* (New York—The Calvert Series. Macmillans).

Department of Biology

Craigie, E. H.—*The Vascularity of the Vagus Nuclei and of the Adjacent Reticular Formation in the Albino Rat* (Jour. Comp. Neur., vol. 42, pp. 57-68).

A Preliminary Experiment upon the Relation of the Olfactory Sense to the Migration of the Sockeye Salmon (Oncorhynchus nerka, Walbaum) (Trans. Roy. Soc. Can., Ser. III, vol. 21).

Notes on the Total Weights of the Squirrel Hake, the Pollock, the Winter Flounder, and the Smelt, and on the Weights of the Liver and Gonads in the Hake and in the Pollock (Trans. Roy. Soc. Can., Ser. III, vol. 21).

Sex-ratio in Canadian Marine Fishes (Contr. Can. Biol., N.S., vol. 3).

Notes on the Vascular Supply in the Brain of a Holcephalian, Hydrolagus (Chimaera) colliei (Jour. Comp. Neur., vol. 42).

Dymond, J. R.—*The Fishes of Lake Nipigon* (University of Toronto Studies: Biological Series. Publications of the Ont. Fisheries Research Laboratory, No. 27).

Dymond, J. R. and Hart, J. L.—*The Fishes of Lake Abitibi (Ontario) and Adjacent Waters* (University of Toronto Studies: Biological Series. Publications of the Ont. Fisheries Research Laboratory, No. 28).

Dymond, J. R.—*Guide to the Game Fishes of Canada* (Royal Ontario Museum of Zoology Guidebook).

Rainbow Trout (Rod and Gun in Canada, July 1926).

A New Trout from Ontario (Canadian Field Naturalist, Jan. 1926).

The Wapiti in Ontario (Canadian Field Naturalist, Sept. 1926).

A Wrangel Island Fish (Canadian Field Naturalist, March 1927).

The Animals of Ontario (Naturalists' Guide to the Americas, published by Williams and Wilkins Co.).

Huntsman, A. G.—*The Comparative Thanatology of Marine Animals* (Transactions of the Roy. Soc. of Can. Third Series, vol. XX, Section V, 1926).

MacArthur, J. W.—*Linkage Studies with the Tomato* (Genetics II: 387-405, 1926).

MacArthur, J. W. and Baillie, W. H. T.—*Sex Differences in Mortality and Metabolic Activity in Daphina Magna* (Science, 64: 229-230, 1926).

Needler, A. W. H.—*Biological Studies of Fishery Statistics* (Contributions to Canadian Biology and Fisheries, being studies from the Biological Stations of Canada, N.S., Vol. III, No. 10, 1927).

Needler, A. W. H. and Huntsman, A. G.—*Fluctuations in the Haddock Fishery of the Bay of Fundy* (Contributions to Canadian Biology and Fisheries, being studies from the Biological Stations of Canada, N.S., Vol. III, No. 18, 1927).

Walker, E. M.—*The Odonata of the Canadian Cordillera* (Bulletin Prov. Museum, B.C., Victoria, B.C.).

DEPARTMENT OF BOTANY

Coleman, L. C.—*Structure of Spore Wall in Ganoderma* (Botanical Gazette LXXXIII: 48-60. 1927).

Duff, G. H. and Welch, Miss C. G.—*Sulphur as an Agent for the Control of Potato Scab* (Phytopathology 17: No. 5. 1927).

Hunter, Miss L. M.—*Comparative Study of Spermogonia of Rusts of Abies* (Botanical Gazette LXXXIII: 1-22. Plates 1-4. 1927).

Moss, E. H.—*The Uredo Stage of the Pucciniastreae* (Annals of Botany XL: 813-847. Plate 34 and 21. Figures in Text. 1926).

Parasitism in the Genus Comandra (New Phytologist XXV: 264-276. 1926).

DEPARTMENT OF CHEMISTRY

Allan, F. B. and King, E. J.—*Reaction of Lactones and of furfuran derivatives with aromatic hydrocarbons and aluminium chloride* (Jour. Am. Chem. Soc. 49, 562, 1927).

Ferguson, J. B.—*The System Water-Phenol* (Journal of Physical Chemistry, XXXI, 757-763, 1927).

Kenrick, F. B. and Sweitzer, C. W.—*Light Scattering of aqueous salt solutions* (Jour. Phy. Chem. 31, 1150, 1927).

Martin, W. H. and Cole, A. F. W.—*The scattering of light in gaseous and liquid chlorine* (Trans. Am. Electrochem. Soc. 49, 135, 1927).

Miller, W. Lash—*The fundamental equation of Willard Gibbs* (Chemisch Weekblad Part 23, No. 38, 1926).

Department of Church History

Johnston, A. J.—*A Larger Fellowship.*

Department of English

Macdonald, J. F.—*Longer English Poems; Fifth Series* (Oxford University Press, Toronto. 1927).

The Religion of Thomas Hardy (Canadian Journal of Religious Thought, June 1927).

Pratt, E. J.—*Titans*, a volume of poems (Macmillans).

Edgar, O. P.—*Henry James.*

Department of French

Green, F. C.—*Nine Tales from "Gens qui passent" by Paul Margueritte* (Oxford Univ. Press. 1927).

The Journal of Lalande's Visit to England in 1763 (The History Teachers' Miscellany, Camb. Univ. Press, Vol. IV, Numbers 8, 9, 10 and 11. 1926).

The Critic of the Seventeenth Century and His attitude towards the French Novel (Modern Philology, Chicago Univ. Press, Vol. XXIV, No. 3. 1927).

Review of "Gautier and the Romantics" by Palache (Canadian Forum, Dec. 1926).

Department of Geology

Moore, E. S.—*Mines and Mining in Spain* (Canadian Mining and Metallurgical Bulletin, No. 178, February 1927).

Iron Ore Resources of Canada Exaggerated (Engineering and Mining Journal, New York, vol. 123, No. 13).

Parks, W. A.—*Thescelosaurus warreni, a new species of Orthopodous Dinosaur from the Edmonton Formation of Alberta* (University of Toronto Studies, Geological Series, No. 21, 1926).

Champsosaurus albertensis, a new species of Rhynchocephalian from the Edmonton Formation of Alberta (University of Toronto Studies, Geological Series, No. 23, 1927).

Time and Life. Presidential Address Royal Society of Canada (Transactions Royal Society of Canada, Third Series, Vol. XX, 1926).

Geology of Ontario (Mining edition Toronto Mail and Empire, 1927).

Biological Abstracts (Several abstracts from the German for "Biological Abstracts," Philadelphia).

Department of Greek

Robertson, J. C. and Carruthers, A.—*High School Latin Book* (Revised Edition) (W. J. Gage and Co.).

Department of German

Fairley, B.—*Charles M. Doughty, A Critical Study* (Jonathan Cape, London).

Hedman, T.—*The Awakening* (The Canadian Journal of Religious Thought, March and April numbers, 1927).

Department of History

Brown, G. W.—*The First St. Lawrence Deepening Scheme* (Michigan History Magazine, October, 1926).

Flenley, R.—*Makers of Nineteenth Century Europe* (J. M. Dent and Sons).

Wallace, W. S.—*A New History of Great Britain and Canada*, new and revised edition (Toronto: The Macmillan Company of Canada, 1926).

The Dictionary of Canadian Biography (Toronto: The Macmillan Company of Canada, 1926).

Wrong, G. M.—*A Canadian Manor and its Seigneurs* (New Edition, Macmillan Company of Canada).

Nationalism in Canada (Journal of the Royal Institute of International Affairs, July 1926, pp. 177-194).

DEPARTMENT OF ITALIAN AND SPANISH

Buchanan, M. A.—*A Graded Spanish Word Book* (University of Toronto Press, 1927).

Shaw, J. E.—*Bibliography of Italian Studies in America* (Italica, Vol. III, Nos. 3 and 4; Vol. IV, Nos. 1 and 2) (April-June, July-September, October-December, 1926; January-March, 1927).

DEPARTMENT OF LATIN

Norwood, G.—*Dramatic Chronicle* (London Mercury, July 1926).

The Prometheus of Aeschylus (Canadian Journal of Religious Thought, March-April 1927).

Reviews (Canadian Forum, 1927).

DEPARTMENT OF LAW

Davison, J. F.—*The Problem of Liquor Legislation in Canada* (The Canadian Bar Review, Vol. IV, No. 7, pp. 468ff).

The Law of Marriage and Divorce in Canada (*Ibid.*, Vol. V, No. 6).

Kennedy, W. P. M.—*The Caroline Statutes of Winchester* (English Historical Review, Vol. XLI, No. 162).

Visitation Law Courts, 1536-1558 (*Ibid.*, Vol. XLI, No. 164).

The Theory of Equality of Nationhood (The Contemporary Review, November 1926).

Sir Charles Bagot and the Colonial Secretary (Bulletin of Historical Research, February 1927).

The Political Development of Canada, 1867-1927 (The Edinburgh Review, April 1927).

Sixty Years of Canadian Progress (The Quarterly Review, April 1927).

MacKenzie, N. A. M.—*The Treaty-making Power in Canada* (The American Journal of International Law, Vol. XIX, No. 3, pp. 489ff).

Two Recent Canadian Treaties (The British Year-book of International Law, 1925-26).

Jacobus Christian v. *Rex* (*Ibid.*).

Report Concerning the Laws of Aviation (The Canadian Bar Review, Vol. IV, No. I, pp. 29ff).

International Notes (*Ibid.*, No. I, pp. 35ff, No. 4, pp. 241ff).

Progressive Codification of International Law (*Ibid.*, Vol. IV, No. 5, pp. 302ff).

The International Law Association (*Ibid.*, Vol. V, No. 2, pp. 106ff).

Germany and Geneva (Bulletin—The League of Nations Society, Vol. IV, No. 5).

Canada's Opportunity (*Ibid.*, No. 6).

Canada in International Affairs (*Ibid.*, No. 6, The Canadian Congress Journal, Vol. VI, No. 3).

DEPARTMENT OF MATHEMATICS

Beatty, S.—*On a Classification of Integral Functions* (Trans. Roy. Soc. Can., Vol. XX, Sect. III, pp. 459-467).

On the Cross Ratio in Space (Trans. Roy. Soc. Can., Vol. XX, Sect. III, pp. 477-487).

Some Tauberian Theorems (Trans. Roy. Soc. Can., Vol. XXI, Sect. III, pp. 1-10).

An Application of the Cross Ratio of Six Elements (Trans. Roy. Soc. Can., Vol. XXI, Sect. III, pp. 11-18).

Chapelon, J.—*Sur les minima des formes quadratiques* (Comptes Rendus de l'Académie des Sciences, August 1926).

Sur le vidage d'un réservoir (Comptes Rendus de l'Académie des Sciences, September 23rd, 1926).

DEPARTMENT OF MINERALOGY

Carmichael, Miss F.—*Catalytic Action in the Oxidation of the Sulphides and Arsenides* (University of Toronto Studies, Geological Series, 1927).

Gerrie, W.—*Molybdenite in LaCorne and Malartic Townships, Quebec* (University of Toronto Studies, Geological Series, 1927).

Kerr-Lawson, D. E.—*Pleochroisc Haloes in Biotite from near Murray Bay, P.Q.* (University of Toronto Studies, Geological Series, 1927).

Parsons, A. L.—*The Dehydration of Gypsum* (University of Toronto Studies, Geological Series, 1927).

Thomson, E.—*A Mineralographic Examination of Cohenite from Ovifak, Greenland* (University of Toronto Studies, Geological Series, 1927).

Canadian Localities for Chalmersite (University of Toronto Studies, Geological Series, 1927).

Woman River-Ridout Map-Area, Memoir (Geological Survey of Canada).

A New Method of Mounting Polished Sections of Mill Products (Trans. Can. Ins. Mining and Metallurgy, 1926).

Walker, T. L. and Gerrie, W.—*Influence of Hot Natural Brines on Dolomitisation* (University of Toronto Studies, Geological Series, 1927).

Walker, T. L. and Parsons, A. L.—*A Re-examination of Bytownite and Huronite* (University of Toronto Studies, Geological Series, 1927).

Beryl and Associated Minerals from Lyndoch Township, Renfrew County, Ontario (University of Toronto Studies, Geological Series, 1927).

Notes on Canadian Minerals—Tremolite, Clinohumite, Stromeyerite, Natron, and Hexahydrite (University of Toronto Studies, Geological Series, 1927).

The Contact Phenomena of the Nepheline Syenites of Port Coldwell, Ontario (University of Toronto Studies, Geological Series, 1927).

DEPARTMENT OF ORIENTAL LANGUAGES

Irwin, W. A.—*The Crisis of the Ancient World* (Canadian Journal of Religious Thought, Vol. IV, No. 3).

Meek, T. J.—*The Master Bible, Contributor* (J. Wesley Dickson and Co., Chicago, 1926).

In the Beginning God. A Series of Biblical Views of Creation. In collaboration with Smith, J. M. P. and Gordon, A. R. (American Institute of Sacred Literature, Chicago, 1927).

The Interpenetration of Cultures as Illustrated by the Character of the Old Testament Literature (Journal of Religion, VII, pp. 244-262).

DEPARTMENT OF PHILOSOPHY

Brett, G. S.—*Francis Joseph Gall and the State of Medicine at the end of the 18th Century* (Canadian Medical Association Journal, March 1927).

Astronomical Symbolism (Journal of the Royal Astronomical Society of Canada, Nov.-Dec., 1926).

Tracy, F.—*Review of "Reality, A New Correlation of Science and Religion," by Canon B. H. Streeter* (Canadian Journal of Religious Thought, March-April, 1927).

DEPARTMENT OF PHYSICS

Allin, Miss E. J. and Ireton, H. J. C.—*The Under-water Spark Spectra of Certain Elements* (Trans. Roy. Soc. Can., Vol. XXI, 1927).

Burton, E. F.—*The Physics of the Ultra-Microscope* (Volume published by The Mayo Clinic, Rochester, Minn., U.S.A.).

A Chapter entitled "Determination of Size and Mass of Colloidal Particles" (Vol. I of Colloid Chemistry by Jerome Alexander).

A Chapter entitled "The Helmholtz Double Layer" (in Vol. 4, Colloid Symposium Monograph, Chemical Clinic Co.).

McDonald, Miss M. C., Sutton, Miss E. E. and McLay, A. B.—*The Arc and Spark Spectra of a Number of Elements in the Lower Quartz Spectral Region* (Trans. Roy. Soc. Can., Vol. XX, 1926).

McLennan, J. C.—*The Spectra of the Aurora and the Constitution of the Upper Atmosphere* (Royal Institution of Great Britain, June 11, 1926).

The Application of Science to Business as it is Conducted To-day (Mail and Empire, Toronto, Jan. 2, 1927).

Helium (Encyclopaedia Britannica, 1926).

Nitrogen in Industry (Bulletin No. 12, National Research Council of Canada).

Nitrogen in Industry (Outline of Bulletin No. 12, National Research Council of Canada).

McLennan, J. C., Cohen, Miss E., and Liggett, M. J.—*Absorption Spectra of Some Metallic Vapours* (Trans. Roy. Soc. Can., Vol. XX, 1926).

McLennan, J. C. and Cooley, R. F. B.—*Note on the Ultraviolet Absorption Spectra of Nickel, Cobalt and Tellurium* (Trans. Roy. Soc. Can., Vol. XX, 1926).

McLennan, J. C., Ireton, H. J. C., and Thomson, K.—*On the Phosphorescence of Nitrogen* (Nature, September 18th, 1926).

McLennan, J. C. and Liggett, N. J.—*Arc and Spark Spectra of Rare Elements in the Fluorite Region* (Trans. Roy. Soc. Can., Vol. XX, 1926).

McLennan, J. C. and McLay, A. B.—*On the structure of the Arc Spectrum of Gold* (Proc. Roy. Soc. London, A, Vol. 112, 1926).

McLennan, J. C. and McLay, A. B.—*On the Structure of the Arc Spectra of Germanium with a Note on that of Carbon* (Trans. Roy. Soc. Can., Vol. XX, 1926).

McLennan, J. C. and McLay, A. B.—*Note on the Arc Spectra of the Elements of the Nitrogen Group* (Trans. Roy. Soc. Can., 1927).

McLennan, J. C., McLay, A. B. and Smith, H. G.—*Atomic States and Spectral Terms* (Proc. Roy. Soc. London, A, vol. 112, 1926).

McLennan, J. C., McLeod, J. H. and McQuarrie, W. C.—*On the Oxygen Spectral Line* $\lambda = 5577.35$ *A.U.* (Nature, September 25, 1926).

An investigation into the Nature and Occurrence of the Auroral Green Line $\lambda = 5577$ *A* (Proc. Roy. Soc. London, A, vol. 114, 1927).

McLennan, J. C., and Plummer, W. G.—*The Crystal Structure of the n-Paraffins, Octane, Hexane, and Pentane* (Trans. Roy. Soc. Can., 1927).

McLennan, J. C., Ruedy, R. and McLeod, J. H.—*On the Origin of the Auroral Green Line in the Oxygen Spectrum* (Trans. Roy. Soc. Can., 1927).

McLennan, J. C. and Smith, H. G.—*On the Series Spectra of Palladium* (Proc. Roy. Soc. London, A, vol. 112, 1926).

McLennan, J. C., Smith, H. G. and Lea, C. A.—*The Band Spectra of Helium and Hydrogen at Low Temperatures* (Proc. Roy. Soc. London, A, vol. 113, 1926).

McLennan, J. C. and Walerstein, I.—*On the Fluorescence Spectra of the Sulphur Group* (Phil. Mag., Vol. III, February 1927).

McLennan, J. C. and Wilhelm, J. O.—*The Crystal Structure of Solid Oxygen* (Phil. Mag., Vol. III, February 1927).

Satterly, J.—*The Expansion of Log (1+y)* (Trans. Roy. Soc. Can., Vol. XX, 1926).

Surface Tension by the Method of Ripples (Phil. Mag., Vol. III, January 1927).

Examination Papers in Physics (Univ. of Toronto, First Year Honour Arts, 1918-1926) with Answers and References (University of Toronto Press).

Smith, H. G. and Westman, Miss M. E.—*Some Infra-Red Spectra* (Trans. Roy. Soc. Can., Vol. XX, 1926).

Wilhelm, J. O.—*An Extension of the Graphical Method of Determining Crystal Structures to the Orthorhombic System* (Trans. Roy. Soc. Can., Vol. XXI, 1927).

DEPARTMENT OF POLITICAL ECONOMY

Innis, H. A.—*Ruperts' Land in 1825* (Can. Hist. Review, December 1926).

The Fur Trade of Canada (University of Toronto Studies, 1927).

Jackman, W. T.—*Improved Highway Systems Important National Asset* (Mail and Empire, Jan. 3, 1927).

Rate Equalisation Claims endanger Reasonable Rates (Financial Post, Feb. 18, 1927).

Motor Transportation Ushers in New Era in Country's Economic Life (Financial Post, June 3, 1927).

Ontario Taxes Increase with Road Expansion (Financial Post, June 3, 1927).

The Relation of Physical Factors to the Financial Results of Railway Operation (in Proceedings of the American Railway Association, Mechanical Division, annual convention, 1927; also in Railway Age (New York), June 11, 1927).

MacIver, R. M.—*The Modern State* (Oxford University Press, July 1926).

DEPARTMENT OF PSYCHOLOGY

MacPhee, E. D.—*Syllabus of Lectures on Educational Psychology Monograph*, 62 pages (University of Toronto Press, Toronto).

FACULTY OF MEDICINE

DEPARTMENT OF ANATOMY

Watt, J. C.—*Bones and Their Significance* (University of Toronto Medical Journal, vol. 4, No. 6, April 1927, pp. 173-175).

The Deposition of Calcium Salts in Areas of Calcification (Archives of Surgery).

DEPARTMENT OF BIOCHEMISTRY

Hunter, A.—*Diet, Dietary Defects and Deficiency Diseases* (Chapter 16 of "An Introduction to the Practice of Preventive Medicine," 2nd edition, by J. G. Fitzgerald).

Goulding, A. M., Borsook, H. and Wasteneys, H.—*The Auto-destruction of Pepsin in Relation to its Ionisation* (J.G.P., 1927, X, 451).

Morrell, C. A., Borsook, H. and Wasteneys, H.—*The Influence of the Backward Reaction in the Peptic Hydrolysis of Albumin* (J.G.P., 1927, VIII, 601, J. Loeb Memorial Vol.).

McFarlane, J., Dunbar, V. E., Borsook, H. and Wasteneys, H.—*The Stages of the Peptic Hydrolysis of Egg Albumin* (J.G.P., 1927, X).

Caulfeild, A. H. W., Cohen, Miss C. and Eadie, G. S.—*The Antigenic Properties of Pollen Fractions* (J. Immunology, XII, No. 2, Aug. 1926) (Jointly with Connaught Laboratories and D.S.C.R.).

CONNAUGHT LABORATORIES

Best, C. H.—*Laboratory Aspects of the Diabetic Problem* (American College of Physicians, Cleveland, February 1927).

Best, C. H., Dale, H. H., Dudley, H. W. and Thorpe, W. V.—*The Nature of the Vaso-dilator Constituents of Certain Tissue Extracts* (Journal of Physiology, Vol. LXII, No. 4, 1927).

Caulfeild, A. H. W.—*The Antigenic Properties of Pollen Fractions* (Journal of Immunology, Vol. XVII, No. 8, 1926).

FitzGerald, J. G.—*The Present Status of Serum Therapy in the Treatment of the Exanthemata* (Canadian Medical Association Journal, Vol. XVI, No. 12, 1926).

Diphtheria Toxoid as an Immunising Agent (Annals of Clinical Medicine, Vol. V, No. 9, 1927).

Moloney, P. J.—*The Preparation and Testing of Diphtheria Toxoid* (*Anatoxine-Ramon*) (American Journal of Public Health, Vol XVI, No. 12, 1926).

Robertson, E. C. and Gay, L. M.—*Skin Reactions to Human Sera* (Bulletin of the Johns Hopkins Hospital, Vol. XL, No. 2, 1927).

The Passive Transfer of Hypersensitivity (*Local and contralateral passive transfer experiments*) (Bulletin of the Johns Hopkins Hospital, Vol. XL, No. 5, 1927).

DEPARTMENT OF HYGIENE

McCullough, J. W. S.—*Public Health Problems of Canada; (a) The Care of the sick. (b) The prevention of disease.*

What we should Spend on Public Health in Canada.

Hospitals—History of, with special reference to Hospitals for Women.

Women Physicians (address to final graduating class of women students).

How to Fight Cancer.

A National Policy of Health.

Sex Delinquency in Young Girls (two papers).

How Tuberculosis Begins in Man.

Modern Treatment of Tuberculosis.

The Mosquitoes which Carry Disease.

Newer Methods of Disease Prevention—How Diphtheria and Scarlet Fever may be Controlled.

Maternity Benefits.—Where afforded, their objects, methods of raising the necessary funds and the apparent results.

DEPARTMENT OF MEDICINE

Brown, A.—*Common Procedures in the Practice of Pediatrics* (McClelland and Stewart, publishers).

Clinical Manifestations of an Enlarged Thymus—In conjunction with E. A. Morgan and A. H. Rolph (Journal American Medical Association, March 1927).

The Production of a Lowered Carbohydrate Tolerance in Dogs (American Journal Diseases of Children, Dec. 1926).

The Anti-Rachitic Effect of December Sunlight, Seasonal Variation.—In conjunction with F. F. Tisdall (Proceedings of the Society of Experimental Biology and Medicine, Vol. XXIV, 1927).

The Anti-Rachitic Effect of December Skylight and December Sunlight through Vitaglass (Proc. Society for Experimental Biology and Medicine, Vol. XXIV, 1927).

Detweiler, H. K.—*A Survey of the Results of Routine and other Wassermann Tests in the Toronto General Hospital for the Past Ten Years* (Canadian Medical Association Journal, 1926, XVI, 800-803).

Diseases of the Liver (Cecil's Textbook of Medicine, Saunders, 1927).
Asthma: its Diagnosis and Treatment (Canadian Medical Association Journal, June 1927, July 1927).
Howland, G. W.—*Occupational Therapy* (Canadian Nurse).
Occupational Therapy (Canadian Medical Journal).
Occupational Therapy (Occupational Therapy and Rehabilitation, New York).
Occupational Therapy (Transactions Canadian Medical Services, Ottawa).
Illegitimate Mothers (Hospital Social Service, New York).
The Study of Basic Instincts (Journal of Abnormal and Dynamic Psychology, Boston).
Morgan, E. A., Rolph, A. H. and Brown, A.—*Clinical Manifestations of Thymic Disturbance* (Jour. Amer. Med. Assoc.).
Prendergast, D'A.—*A Case of Agranulocytic Angina* (Canad. Med. Journal, April 1927).
Lead Poisoning (St. Michael's Hosp. Bulletin, 1927).

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

Lailey, W. W.—*The Progress of Maternal Welfare in the United States and Canada.*

DEPARTMENT OF OPHTHALMOLOGY

MacDonald, A. E.—*Modern Advances in Ophthalmology* (Medical Bulletin).

DEPARTMENT OF OTO-LARYNGOLOGY

Burnham, H.—*Headaches of Nasal Origin* (Toronto Medical Bulletin, April 1927).
Goldsmith, P. G.—*Focal Infection from the Oto-Laryngologist Standpoint* (American Rhinological and Oto-Laryngological Association, Montreal).
The Pathology and Treatment of Chronic Pan Sinusitis (New York State Medical Association, Niagara Falls, N.Y.).
Inflammation of the Middle Ear Tract (Inter-State Medical Association, Cleveland, Ohio).
Rae, C. A.—*Ulceration of the Mouth and Tongue* (Renfrew County Medical Society, July 24th, 1926).
Pain and Swelling Around the Ear (South Porcupine Medical Society, March 25th, 1927).

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

Bates, J. E.—*Leptospirosis Icterohaemorrhagica (Weils' Disease).* (Can. Med. Assoc. Jour., 1926, 16, 1466).
Brown, M. H.—*Aortitis Associated with Systemic Infections.* (Annals of Clin. Med., 1926, 5, 353).
Holman, W. L.—*Focal Infection and Elective Localisation of Bacteria.* (Univ. of Toronto Med. Jour., 1926, 4, 56).
The Localisation in Animals of Bacteria Isolated from Foci of Infection. Letter. (Jour. Amer. Med. Assoc. 1927, 88, 424).
Johnstone, B. I.—*On the Pathology of Bright's Disease.* (Univ. of Toronto Med. Jour., 1926, 3, 65).
Kastlin, G. J.—*Agranulocytic Augina.* (Amer. Jour. Med. Sci., 1927, 173, 799).
Klotz, Oskar—*Concerning Aneurysms.* (University of Toronto Studies, Pathological Series No. 7, 1926).
Yellow Fever. (Western University Gazette, February 18th, 1927, London, Ont).
West Africa. (Univ. of Toronto Med. Jour., 1927, 4, 92.)
The Opening of Tropical Africa by Medical Research. (Proceedings of the Canadian Club, 1926-1927).

Department of Pathological Chemistry

Harding, V. J.—*N Metabolism in the Puerperium* (Jour. Biol. Chem., LXXIII, 1927).

Hunter, G. and Eagles, B. A.—*Non-Protein Sulfur Compounds of Blood Sympectothion* (Journal of Biol. Chem., 1927, 72, pp. 123-183).

Glutathione (Jour. Biol. Chem., 1927, 72, pp. 123-183).

On the Presence of Cystine in Liver (Jour. Biol. Chem., 1927, 72, pp. 123-183).

Glutathione; A Critical Study (Jour. Biol. Chem., 1927, 72, pp. 123-183).

The Colorimetric Estimation of Cystine and Glutathione (Jour. Biol. Chem., 1927, 72, pp. 123-183).

Department of Pharmacology

Currie, G. C. and Henderson, V. E.—*A study of the movements of the large intestine in the Guinea Pig* (Amer. Jour. Physiol., 1926, 78, 287).

Henderson, V. E., Brown, W. E. and Lucas, G. H. W.—*The True Anaesthetic Value of Nitrous Oxid* (Anaesthesia and Analgesia, 1927, 6, 21).

Henderson, V. E. and Sparks, M. I.—*Recent Respiratory Stimulants* (U. of T. Medical Journal, April 1927).

Henderson, V. E. and Sparks, M. I.—*Digitalis; Its Source, Preparation and Employment in Medicine* (Can. Med. Assoc. Jour., 1927, 17, 530).

Sparks, M. I.—*The Potency of Various Samples of Digitalis Grown in British Columbia* (Jour. Amer. Pharm. Assoc., 1927, 16, 203).

Department of Physiology

Aszodi, Z. und Ernst, Z.—*Die Wirkung der Pankreasextirpation und der darauf folgenden Thyreoektomie auf die Empfindlichkeit von Hunden gegen Insulin* (Arch. f. d. ges. Physiol., 1927, CCXV, 431).

Barbour, A. D., Chaikoff, I. L., Macleod, J. J. R. and Orr, M. D.—*Influence of Insulin on Liver and Muscle Glycogen in the Rat under Varying Nutritional Conditions* (Am. Jour. Physiol., 1927, LXXX, 243).

Campbell, W. R. and Markowitz, J.—*On the Metabolism of Dihydroxyacetone in Pancreatic Diabetes* (Amer. Jour. Physiol., 1927, LXXX, 561).

Preferential Utilisation of Carbohydrate in Diabetes (Jour. Clin. Invest., 1927, IV, 37).

Chaikoff, I. L.—*Observations on the Ketone Body Excretion, the D:N Ratio and the Glycogen Content of the Liver and Muscles of Starved Depancreatised Dogs.*

Chaikoff, I. L. and Macleod, J. J. R.—*Effect of Insulin on the Respiratory Exchange of Fed and Fasting Rabbits* (Jour. Biol. Chem.).

Choi, Y. O.—*The Relationship of Glycogen Formation in the Muscles to the Pancreas and to Epinephrin.*

Gee, A. H. and Chaikoff, I. L.—*The Identification of Acetaldehyde in Normal Animals and Its Quantitative Study in the Blood of Normal and Diabetic Dogs* (Jour. Biol. Chem., 1926, LXX, 151).

Markowitz, J.—*The Respiratory Exchange of Diabetic and Non-diabetic Dogs following Hepatectomy.*

Markowitz, J. and Campbell, W. R.—*On the Metabolism of Dihydroxyacetone in Pancreatic Diabetes* (Amer. Jour. Physiol., 1927, LXXX, 561).

Markowitz, J. and Soskin, S.—*Pancreatic Diabetes and Pregnancy* (Amer. Jour. Physiol., 1927, LXXIX, 553).

Olmsted, J. M. D. and Harvey, J. M.—*The Respiratory Exchange in Frogs during Muscular Exercise and After Injection of Insulin* (Amer. Jour. Physiol., 1926, LXXVIII, 28).

The Glycogen Content of Frog's Muscle after Injection of Insulin and Its Relation to Contraction (Amer. Jour. Physiol., 1927, LXXX, 643).

Soskin, S.—*Muscle Glycogen as a Source of Blood Sugar* (Amer. Jour. Physiol., 1927, LXXI, 382).

Simpson, W. W. and Macleod, J. J. R.—*Post mortem Changes in the Free Sugar, Glycogen, Phosphates and Lactic Acid in Mammalian Muscle* (Trans. Roy. Soc. Canada, 1926, XX, 371).

Taylor, A. C. and Olmsted, J. M. D.—*The Effect of Insulin on the Respiratory Exchange of Decerebrate and Decapitate Cats* (Amer. Jour. Physiol., 1926, LXXVIII, 17).

Taylor, N. B. and Caven, W. R.—*Observations on Serum Calcium After Adrenalectomy* (Amer. Jour. Physiol.).

Urquhart, R. W. I.—*Experimental Electric Shock* (Jour. Indust. Hygiene, 1927, IX, 140).

Department of Psychiatry

Farrar, C. B.—*Social Aspects of Mental Deficiency* (The Canadian Medical Association Journal, 1926).

A Simple Classification of the Psychoses with Presentation of a Few Representative Types (Canadian Practitioner and Review, Mar. 1927).

Department of Surgery

Gallie, W. E.—*Amputations Ancient and Modern* (University of Toronto Medical Journal).

Pyloric Stenosis (University of Toronto Bulletin).

Some Pitfalls in the Diagnosis of Intussusception (Canadian Medical Association Journal, 1927).

Gallie, W. E. and LeMesurier, A. B.—*Repair of Injuries to Crucial Ligament* (Annals of Surgery, April 1927).

The Late Repair of Fractures of the Patella and Rupture of the Ligamentum Patellae and Quadriceps Tendon (Journal of Bone and Joint Surgery, January 1927).

McConville, J. W.—*Supraclavicular Anaesthetisation of the Brachial Plexus* (The St. Michael's Hosp. Medical Bulletin of December 1926).

Starr, C. L.—*Reconstruction Surgery in Civilian Practice* (Inter-State Post Graduate Transactions).

Osteomyelitis (Dean Lewis' Practice of Surgery, Vol. 11, 1927).

Department of Therapeutics

Rudolf, R. D.—*The Oral Administration of Glucose* (Jour. Can. Med. Assoc., July 1926).

The Immediate and Ultimate Prognosis in Heart Disease (Proc. Interstate Postgraduate Med. Assoc. of N. Amer., Jan. 1927).

Rudolf, R. D. and Graham, J. D.—*Notes on Ephedrin Sulphate* (Amer. Jour. of Medical Sciences, March 1927).

FACULTY OF APPLIED SCIENCE

Department of Ceramics

Montgomery, R. J. and Watson, R. J.—*Clay, Silica, Sand and Lignite Deposits. North of the National Transcontinental Railway on the Mattagami, Missinaibi and Opazatika Rivers* (Part 2 of vol. 36, Annual Report of the Ontario Bureau of Mines).

DEPARTMENT OF CIVIL ENGINEERING: MUNICIPAL AND STRUCTURAL

Gillespie, P. and Wilson, F. E.—*Reinforced Concrete Poles* (Bulletin No. 6, School of Engineering Research, University of Toronto).

Young, C. R.—*J. & L. Junior Beam Construction Tested* (Canadian Engineer, August 31st, 1926).

Possible Economics in Steel Construction (Canadian Engineer, Nov. 9, 1926; Contract Record and Engineering Review, Nov. 3, 1926; Construction, Dec., 1926; Engineering and Contracting, Nov. 1926; Canadian Machinery, Nov. 4, 1926).

Economic Base Width of Transmission Towers (Canadian Engineer, Aug. 17, 1926).

Bridge Building Progress in 1926 (Contract Record and Engineering Review, Dec. 29, 1926).

Steel Building Construction Progress (Canadian Machinery, Dec. 1926).

Model Transmission Towers Under Load (Canadian Engineer, May 31, 1927).

Net Section of Drilled Plates (Bulletin No. 6, School of Engineering Research).

DEPARTMENT OF ELECTRICAL ENGINEERING

Smith, V. G.—*A Mathematical Study of Radio-Frequency Amplification* (Proc. I.R.E., vol. 15, No. 6, p. 525, June 1927).

DEPARTMENT OF MECHANICAL ENGINEERING

Allcut, E. A.—*Diesel Engines* (The Engineering Journal, Nov. 1926).

Producer Gas for Road Traction, Section No. 12 (Research Bulletin No. 6).

Some Tests on a Two Stroke Cycle Oil Engine, Section No. 13 (Research Bulletin No. 6).

The Influence of Speed on Engine Performance, Section No. 14 (Research Bulletin No. 6).

Further Tests on a Two Stroke Oil Engine (Proc. I. Mech. E., May 1927).

Angus, R. W.—*The Standard Short Tube, an Investigation of the Pressures and Shape of the Jet in the Tube* (Engineering Research Bulletin of the University of Toronto).

Coefficients for Venturi Meters and the Effect of an Obstruction in the Throat (Engineering Research Bulletin of the University of Toronto).

Heat Transfer on Hot Blast Heaters (Engineering Research Bulletin of the University of Toronto).

DEPARTMENT OF METALLURGICAL ENGINEERING

Guess, G. A.—*Marketing of Ores* (Trans. Can. Inst. of Mining and Metallurgy, Vol. XXIX, 1926).

DEPARTMENT OF MINING ENGINEERING

King, J. T.—*The Effect of Air on Cupellation Losses* (Bulletin No. 6, School of Engineering Research).

DEPARTMENT OF CIVIL ENGINEERING: SURVEYING AND GEODESY

Melson, J. W.—*Notes on the Use of Common Logarithms* (Engineering Society of Toronto University).

Stewart, L. B.—*A Method of Base-line Measurement* (Bulletin No. 7 of the School of Engineering Research).

ONTARIO COLLEGE OF EDUCATION

Sandiford, P.—*Junior High Schools and Junior Colleges, or the Reorganization of Secondary Education* (Queen's Quarterly—April, May, June, 1927—XXXIV, 4, pp. 367-383).

Recent Studies in the Psychology of Reading (Proceedings of the Saskatchewan Educational Association, Easter, 1927).

The Inheritance of Talent among Canadians (Proceedings of the Saskatchewan Educational Association, Easter, 1927).

The Talented Child (Proceedings of the Saskatchewan Educational Association, Easter, 1927).

Present Status of Tests and Measurements in Colleges and Universities (Proceedings of Conference of Canadian Universities, London, 1927).

The Staff of the Ontario College of Education—*The School.* A Magazine devoted to Elementary and Secondary Education. (Monthly, 116 pp.).

FACULTY OF FORESTRY

Howe, C. D.—*The Wooden Head and the Wooden Tree* (Illustrated Canadian Forest and Outdoors, July 1926, p. 383).

Our National Need—Vision (*Ibid.*, Dec. 1926, p. 671).

A National Forest Vision (*Ibid.*, April, 1927, p. 202).

A Challenge to Canadian Foresight (*Ibid.*, May, 1927, p. 247; June, p. 327).

Relationship of University Training to Practical Lumbering (Report 19th Annual Meeting of Canadian Lumbermen's Association. Briefed in Canada Lumberman, April 1, 1927).

Forest Investigation Work in Canada (Chapter 17 in "Aims and Methods in the Study of Vegetation" published by The British Empire Vegetation Committee, London, 1926).

FACULTY OF DENTISTRY

Ante, I. H.—*Fundamental Principles of Fixed and Removable Bridge Prosthesis.*

Cowling, Dr. T.—*Applied Physics, Chemistry and Metallurgy* (American Association of Dental Schools, January 24, 1927).

The Structure of Metals (Academy of Dentistry, February 16, 1927).

Cummer, W. E.—*Impressions for Partial Denture Service* (Dental Cosmos, September 1926).

DEPARTMENT OF PUBLIC HEALTH NURSING

Emory, Miss F. H. M.—*Tendencies in Public Health Nursing, Present and Future* (The Canadian Nurse, Nov. 1926).

Russell, Miss E. K.—*Public Health Nursing Education and the Undergraduate Nurse* (The Canadian Nurse, November 1926 and the Public Health Journal, November 1926).

(11) REPORT OF THE LIBRARIAN

(W. S. Wallace, Esq., M.A.)

I beg to submit the following report of the work of the University Library for the year ending June 30, 1927.

The number of volumes added to the Library during the year has been 9,231, and the number of pamphlets 3,862, making a total of 220,349 bound volumes and 76,876 pamphlets.

The statistics of the use of the library by undergraduates in comparison with previous years are as follows:

	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27
Day books	41,928	51,513	80,172	88,068	94,143	106,485
Books taken out for the night.	18,998	20,508	31,314	34,549	38,976	39,779
Books taken out for the week..	4,792	5,715	12,316	11,727	12,327	13,014
Totals	65,718	77,736	123,802	134,344	145,446	159,278

These figures, as will be seen, reveal a continued growth in the use of the Library by undergraduates, amounting during the last five years to nearly 150 per cent.

At the same time there has been an increase in the number of professors and graduates who avail themselves of the privileges of the Library. Whereas in 1922-23 there were 497 names in the graduates' register, there are now 988, and whereas in 1922-23 there were 390 names in the professors' register, there are now 459. The total number of volumes borrowed at the professors' and graduates' register now approximates 20,000 per annum.

Most of this increase, moreover, occurs at certain periods of the year, and consequently creates a situation more acute than appears even from the figures. The experiment begun last year whereby extra assistants were taken on to meet this seasonal increase has relieved the situation somewhat; but it has been found difficult to obtain for occasional work trained assistants, and the relief obtained has thus been limited in its character. It is clear that if the use of the Library continues to increase further additions to the permanent staff will be necessary.

An unfortunate result of the pressure under which the Library staff has worked during the past year has been that very little progress has been made with the filing of the Library of Congress cards. This depositary set of cards will be so useful that I regard it as highly desirable that the filing of the cards should be pushed forward as rapidly as possible. Filing is work which can be done by occasional or part time assistants, and with this object in view I have asked for an increase in the appropriation for occasional assistants next year.

During the past year the congestion in the stack room of the University Library has become acute. In some sections it became physically impossible to put books away in their proper places. Two years ago I called the attention of the Library Committee and of the Board of Governors to the fact that this state of congestion was approaching, and the temporary device was adopted at that time of removing from the stack the books of the Royal Canadian Institute and housing them in the Art Room of the Library. This arrangement, however, has now ceased to give relief, and it has become urgently necessary to find means of solving the difficulty. With this object in view I have, with the co-operation of the representatives of the Medical Faculty of the University, recommended the withdrawal from the main stack of all books and periodicals classified under the heading of *Medicine*, and the establishment in the basement of the Library of a new Medical Reading Room. This will serve not only to give the students and professors in the Medical Faculty specialised service such as the Library has unfortunately not been able hitherto to render, but it will also afford relief in the stack for a period of about two years. It cannot, however, be emphasised too strongly that this solution is also of the most temporary nature, and that within the next two or three years the University must face the expense of enlarging the University Library.

Finally, I wish to bring to your attention once again the faithful and efficient service rendered by the assistants in the Library, and to express the hope that it may be found possible before long to increase considerably the scale of Library salaries. Library science, including bibliography, is now a recognized course in

a number of Canadian universities, as well as in a great many American universities; and if the University of Toronto is to keep pace with the times it must recognize in a tangible way the professional status of the assistants in the Library.

(12) REPORT OF THE DIRECTOR OF THE DEPARTMENT OF SOCIAL SERVICE

(Professor J. A. Dale, M.A.)

A complete study has been made of the present status of the 247 students who have graduated since the foundation of the department. The report shows, in general summary, 79 in social work in Toronto and 33 elsewhere; 46 are now in other occupations; 41 are married; 6 are taking further training; 4 have died; 4 were at the time of the report available for appointment, but have since found positions; 38 were at home. On further analysis, the 33 listed as in social work outside Toronto include 16 in Canada, most of them in posts of considerable responsibility and influence; while 15 are in the United States, some, no doubt, attracted by higher salaries, but most in search of wider experience. These have won recognition of the excellence of our training in many quarters; for example, during the past four years Buffalo has taken 6, and has recently invited another. Of the 46 in other occupations 11 are public health nurses—one, the head of that department in this University; many others are in vocations in which their training is of direct value. It is noteworthy that no graduate of the last three years has gone into any other occupation. Of the 38 at home, a few have not fitted into social work or are held back by illness, but most are detained by home duties; many—and this is true also of those married since graduation—are giving valuable service as volunteers or as Board members. Both in numbers and quality the graduating class is likely to make a worthy addition to the above record.

It is a special pleasure to report that Miss McGregor has been on duty again the whole session, after her severe illness. She has devoted much thought to the development of our training, especially on the technical side. In this important matter we have constantly profited by discussion not only with those social workers in Toronto who supervise the practical work of our students, and so are in regular touch; but with many outstanding members of the profession in the United States. We are thus able to take some part in the development of professional standards at a most interesting stage, notably through the Association of Training Schools, to the executive of which the Director has recently been elected. As a result of these discussions and of our experiments, we expect to present a plan next session which will make a definite advance on this side of our work.

One of the most vital needs of every training school is a steady supply of well-prepared students, reasonably equal in previous education. Assuming the call to service and the personality to make it effective, one of the best sources should be found in the university graduates. There are five in the freshman class, as against two in the graduating class; but many graduates are not yet prepared to spend two full years in training. Unless the proportion is to continue small, it will be necessary to consider ways of interlocking the courses.

The partnership of social worker and public health nurse so admirably worked out in the city of Toronto is foreshadowed for the students by an interchange of teaching between the departments; the classes of Miss Russell and Miss Emory have become a most valuable part of the course. The case-work studies have been strengthened by the classes given by Miss Holland (with the cordial permission of Dr. Hastings), and by Mrs. J. B. McGregor. In all these groups discussion is the method, and Miss McGregor takes an active part.

Three Extension courses have been given, mainly to volunteer workers; one on Group Leadership in Recreation, by Mrs. G. C. Parker; two on the Case-work Method, by Miss Held. This experiment was made possible by the co-operation of Mr. Dunlop.

Our belief in a broad education, sharpened to an efficient point, is strengthened by watching the interplay between specialisation and integration in the community. Social work itself becomes more organised, and its various branches require more and more specialised skill—as in all professions; we lay it down as a guiding principle that students should have some knowledge of the main branches, no matter in which of them their special interest lies, or their future work. But that is not all. We try to study the community as a whole, and men as complete individuals. Especially do we try to understand the other social services and their interrelations. Religion, education, medicine and public health, law, recreation, have each their field of activity, their formulae, their trained staff, though they blend inextricably. They were not originally separate, but gradually specialised out with the growth of population, knowledge and organisation. They have meaning and value only as they rise out of and return into the everyday world of flesh and blood people, whose welfare may be served by specialists and whose activities may be departmentalised, but every one of them in the last resort an individual (*i.e.*, undivided) soul with an integrity of its own. We hope, therefore, that this school will do something to help mutual understanding and respect between different kinds of workers for the common welfare. Our graduates will have their own methods and standards in whose validity they will, I believe, have a firm faith, but they will uphold them with patience and charity towards others both lay and professional.

(13) REPORT OF THE DEPARTMENT OF PUBLIC HEALTH NURSING.

(*Miss E. K. Russell, B.A., Director*)

The year 1926-27 has been marked by two most significant events, the one is the inauguration of the new four year course, and the other is the removal of our department to the new School of Hygiene. It is perhaps unusual that such a combination of new work and new opportunity should fall together in one year.

The work of the department during the past session divides itself rather sharply into four sections:

1. The one year diploma course.....26 full time students enrolled
   19 occasional students enrolled
2. The new four year course.....4 students enrolled
3. Extension work
   (*a*) Hospital pupil nurses.....215 students
   (*b*) Refresher course for graduates (2 weeks)....36 students
   (*c*) Weekly lectures in Hamilton.....for 10 weeks
   (*d*) Weekly lectures in Toronto.....for 12 weeks
4. Work for foreign students and visitors. During the past year these have come from France, Jugo-Slavia, United States, Hungary, Austria, Brazil, Scotland, England, Poland, Japan. The length of residence here for these people has varied from a few days up to four months.

The four year course should, in time, become satisfactory university work, while the one year course should be discontinued or perhaps assume the character of extension work. It will take several years, however, to accomplish this exchange and we must emphasise the fact that, at present, the one year course is our only source of supply to help meet Ontario's demand for public health nurses, and that this course must, therefore, receive very careful attention. While the new course has made a satisfactory beginning during the past session, it is too early yet to say more. The first year has shown us that there are difficult

adjustments to be made between the University and the School for Nurses of the Toronto General Hospital, as these two institutions are sharing in the responsibility for the course. In making these adjustments we have received generous and sympathetic co-operation from our sister school.

The extension work for hospital pupil nurses is receiving an undue amount of our time. A class of twenty-four pupils is with us constantly from the first of September until the first of June, with the actual personnel of the class changing the first of each month. We are continuing this work as an evidence of good will but trying at the same time to show the hospital nursing schools that it would be more fitting if we could help them to give this teaching in their own schools, perhaps by offering special instruction to the teachers who will do this work in those schools.

The work for foreign students and visitors demands careful consideration. The Rockefeller Foundation has established a policy of travelling fellowships which brings a great many foreigners to the United States; it has become routine now to send almost all of the foreign nurses to Toronto and in almost every case our department is asked to take charge of these people. The time involved for our tiny staff is a serious consideration as there is continuous arrangement, instruction and entertainment all to be furnished over and over again for each individual. Also there are many other Canadian and American visitors as Toronto is peculiarly the Mecca of all public health students. This department has now come to a position where we are facing heavy responsibilities with very meagre resources. This is all most interesting work which we very much hope to continue but we must admit that we are not equipped to meet it with any degree of satisfaction.

(14) REPORT OF THE DEPARTMENT OF UNIVERSITY EXTENSION AND PUBLICITY

(W. J. Dunlop, Esq., B.A., B.Paed.)

In recent years adult education has become a very important project in the minds of those who are trying to promote educational progress. In all countries of the civilized world adults seem to be seeking to augment their academic and professional qualifications, while carrying on the occupations in which they are engaged during the day. In Canada the desire for adult education is making itself more apparent each year. Exercise of the mind, it is realized, is probably just as necessary and just as pleasurable as exercise of the body.

The experience of the seven years, during which I have been engaged in this work, has convinced me that no voluntary organisation, formed for the purpose, can successfully carry on adult education; universities can undertake this work and libraries and boards of education, but not individuals grouped in an organisation, no matter how well-meaning and enthusiastic these individuals may be. The first essential for the successful conduct of any scheme of adult education must be permanence. A case in point is the Workers' Educational Association, with which this department has been co-operating for seven years. During the year now closing there were 1,142 students in Toronto, Hamilton, Stratford, Windsor, Brantford, Galt, and Woodstock, but not ten per cent. of these students were working men and women in the strict sense of the term. People of all sorts of occupations crowded into these classes, demanding education on the same terms as were arranged for workers. Yet all Canadians are workers and all are entitled to facilities for adult education. This situation was discussed very thoroughly by the Committee on University Extension and it was decided that, in the interests of all concerned, it would be better that all evening classes, held at the University, should be directly under this department and that the annual fee for each class of this sort should be $5.00. This proposal,

worked out in detail, was recommended to the Board of Governors and was approved. The Workers' Educational Association will, hereafter, hold its classes, not at the University, but in those parts of the city where working men and women live. It remains to be seen how this plan will succeed, but it seems to be the conviction of many of those interested in adult education in Great Britain, and certainly it is my own opinion, that facilities for adult education must be arranged for the people as a whole, without distinction as to occupation, and that it is futile to attempt to carry on special courses of instruction for people of certain occupations. The short extension course, and not the continuous evening class, is most decidedly the means for meeting the special needs of specialised occupational groups.

The Teachers' Course continues to prosper and to grow. In the past seven years 142 teachers have graduated, and in the Second, Third, and Fourth Years of the course there are now 401 students. The Teachers' Classes at the University and in Hamilton are well attended and teachers from suburban towns and cities are making use of these winter classes rather than the Summer Session. As so much work is done in the winter, and as the winter work is much preferred by teachers, our Summer Session in undergraduate subjects is not likely to be large, though it grows a little each year. Seven years ago there were only thirty teachers taking this work here and now there are more than twelve times that number.

Correspondence courses increase in popularity each year, but this work must be developed to much greater proportions than has been possible heretofore. One of the largest and most famous universities in the United States is advertising in Canada a wide range of correspondence courses and has sent over a resident representative to promote this work throughout the Dominion. So far as Ontario, at least, is concerned, the demand for correspondence instruction in university subjects should be supplied by this University rather than by one located beyond the borders of Canada.

The popularity of Extension Lectures continues to increase. This year 338 of these lectures were delivered: 184 outside of Toronto and 154 within the city. The centres in which organizations have taken advantage of this service are as follows: Acton 4, Barrie 6, Belleville 3, Bowmanville 3, Brampton 1, Brantford 2, Burlington 1, Caledonia 3, Chapleau 1, Chesley 4, Durham 1, Elora 4, Galt 5, Guelph 1, Hamilton 44, Kitchener 2, London 3, North Bay 1, Niagara Falls 1, Orillia 4, Oshawa 48, Ottawa 1, Peterborough 9, Port Colborne 7, Port Dover 1, Scarboro Bluffs 1, South Monaghan 1, St. Catharines 2, St. George 2, Stratford 3, St. Thomas 1, Sudbury 1, Sundridge 1, Toronto 154, Vineland Station 2, Watford 1, Welland 6, Woodstock 2. The members of the staff who gave these lectures are as follows: the Director 36, Dr. F. B. Allan 1, Professor E. A. Allcut 1, Mr. V. W. Bladen 1, Dr. W. E. Blatz 22, Dr. A. Brady 4, Professor G. S. Brett 1, Professor G. G. Brown 1, Dr. G. W. Brown 3, Professor E. F. Burton 1, Professor J. H. Cameron 1, Professor J. Cano 1, Dr. C. A. Chant 1, Professor A. P. Coleman 11, Professor L. Coleman 2, Professor G. A. Cornish 1, Professor E. A. Dale 4, Professor H. J. Davis 3, Dr. R. D. Defries 6, Professor B. Fairley 3, Mr. W. S. Ferguson 5, Dr. D. T. Fraser 13, Professor E. Goggio 6, Miss D. Haines 2, Dr. C. G. Harcum 7, Professor W. J. K. Harkness 2, Mr. Hosking 20, Dean C. D. Howe 7, Dr. G. W. Howland 2, Principal M. Hutton 7, Dr. H. A. Innis 1, Professor W. A. Irwin 4, Professor G. E. Jackson 1, Professor F. C. A. Jeanneret 1, Professor G. M. Jones 1, Professor R. S. Knox 1, Professor A. T. Laing 1, Miss A. L. Laird 4, Professor H. Lasserre 11, Mr. A. Lismer 19, Professor J. F. Macdonald 16, Professor T. F. McIlwraith 25, Professor H S. McKellar 7, Professor N. A. MacKenzie 1, Professor J. W. Macmillan 5, Dr. A. G. McPhedran 4, Dr. S. A. B. Mercer 1, Professor E. S. Moore 1, Professor W. A. Parks 2, Mr. L. B. Pearson 2, Dr. G. D. Porter 7, Professor E. J. Pratt 12, Mr T. A. Reed 2, Miss E. K. Russell 9, Professor P. Sandiford 1, Professor

C. B. Sissons 2, Dr. G. E. Smith 3, Mr. M. L. Stokes 6, Professor R. B. Thomson 4, Dr. F. Tracy 5, Mr. J. F. Van Every 1, Professor C. H. C. Wright 2, Professor R. K. Young 1. According to the records 16,748 persons attended these lectures.

The total number of students in extension courses and classes this year has been 2,746, made up as follows: In the Teachers' Course, 401; in correspondence courses, 511: (Specialists, 13; Arts, 143; Upper School, 273; Middle School, 39; Commercial, 39; Forestry, 4;) Tutorial Classes, 242 (English Literature (Shakespeare), 30; English Literature (Modern), 64; Accounting, 20; French, 21; Journalism, 10; Volunteer Case workers, 45; Art Appreciation, 52) Short courses, 425 (Art of the Theatre, 19; Books, 62; Public Health Nursing, 25; Private Duty Nursing, 99; Pupil Nurses, 220) Occupational Therapy, 25; Workers' Educational Association, 1,142.

Of the 2,746 students enrolled 1,094 were men and 1,652 women.

The Course in Occupational Therapy which has been in operation during this year has fully justified the expectations of those interested. This course was assumed by this department as an experiment so that, should there not be much demand for it, it could easily be discontinued; and, if it should prove a success, it might be handed over in a few years to some other department of the University with which it may be more logically related. That is to say, the Department of University Extension is being used as an experimental station. This would seem to be a very appropriate use for this department because here a course can be made to pay its way and can be put on its feet without much, if any, expense. A course for the instruction of nurses who are preparing for teaching posts in hospitals has been worked out in the same way with the idea that this course also will be carried on in this department as an experiment and will later, if it is a success, be handed over to some other faculty or department. This use of the Department of University Extension is new with this year and so far has quite justified itself.

Avenues for publicity for the University are not at all difficult to find; in fact, they force themselves insistently on one's attention. During the past year the newspapers of the Province, both daily and weekly, have carried an immense number of news items, long and short. Indeed, so large has the University become, so varied are its activities, and so great is the interest of the people in its work, that one very rarely sees an issue of any newspaper which does not carry some reference to the University of Toronto. Many columns of news have been handed out to representatives of the Press. Every day reporters come to this office seeking news; news items are sent to the Canadian Press, to the Wilson Publishing Company, and to educational magazines in the United States quite frequently; the telescope service continues to draw large numbers of interested people; university bulletins are issued from time to time; the university exhibit at the Canadian National Exhibition is carefully arranged each year; questions of all sorts are answered daily in the office, over the telephone, and by letter. The Department of University Extension and Publicity is very frequently used by the public as an information bureau and no one has ever been turned away with a curt answer.

Articles on the University's work are supplied to magazines and periodicals of various kinds; these special articles average about one per week throughout the year; such opportunities as this for publicity are too good to be missed. Illustrations are furnished for magazines, and half-tones are loaned very frequently. The University's paid advertising is carefully placed, but a great deal more of this could be done to advantage if the funds were available. The correspondence carried on by this office is very large and increases each year. The aim of this department is to serve the public in every legitimate respect and the demands upon it are becoming enormous. It is only fair to say, however, that the public appears to be very grateful for the service rendered.

(15) REPORT OF THE DEPARTMENT OF MILITARY STUDIES

(Brig.-Gen. G. S. Cartwright, Director)

As requested in your letter of 15th March, I have the honour to report as follows on this department for the session 1926-27:

2. *Enrolments.*—The number of Honours and Pass students enrolled in the seven courses named below were:—

Course	Arts	Sc.	Dent. Med.	For.	Teachers	Total
1. (General) Juniors (II Arts)	28	..	..	..	..	28
2. " Intermediates (III Arts).	34	..	..	..	..	34
3. " Seniors (IV Arts)	31	..	..	..	..	31
4. " Special (II, III, IV Yrs., for students unable to attend courses 2 and 3)	18	25	14	2	2	61
5. (Engineers)	..	7	..	..	..	7
6. (Medical)	..	..	13	..	..	13
7. (Artillery)	4	13	..	2	..	19
						193

The course in Artillery is a new one, commenced this year. Those taking this course have shown a very keen interest.

In addition to the above, 117 took drill, musketry, physical training and other practical instruction with the C.O.T.C.

3. During 1925-26 the following students were successful in obtaining the certificates named:

War Office Certificate "A", Infantry	45
" " " "B", "	5
" " " "A", Engineers	8
C.A.M.C. Certificate, Lieutenant	10

During the present session—1926-27—four students passed for Certificate "A", Infantry and three for "B", Infantry in November. As a result of the War Office examination held on 8th and 9th March, 1927, the following were successful:

War Office Certificate "A", Infantry	26
" " " "B", "	15
" " " "A", Engineers	3
" " " "A", Artillery	3
" " " "A", Medical	7

Six students took training with the Canadian Air Force at Camp Borden and were recommended for the 2nd year course, and four have been accepted for the first year course during the summer of 1927.

The practical side of Military Studies, carried out in the C.O.T.C., finds many difficulties owing to the lack of suitable buildings; and the need of a drill shed was more than ever felt this season, as the exceptionally wet weather in the autumn made it, as a general rule, impossible to drill out of doors, and in consequence the cadets had to be instructed in rooms, etc., ill adapted for this purpose, and there is no doubt that this lack of accommodation seriously affects the efficiency of the corps.

The dream of the C.O.T.C. is that some day a public spirited citizen or citizens will come forward and make a gift of a drill hall to the University for the use of the C.O.T.C. This, in addition to providing the very necessary accommodation for drills and other military exercises will also fill a much felt want, viz., a further place in addition to Hart House where students can play indoor baseball, badminton, handball, etc., during the winter, and thus obtain exercise and recreation during the long evenings when those (and they are many) who do not play hockey are handicapped.

Further, owing to the increased numbers of the C.O.T.C. and expansion in the activities of the Medical Association, the premises at 184 College Street are strained to their limits to meet the needs of these two departments, and the situation is not satisfactory for either party, and adds to the difficulty of carrying on the work of both the C.O.T.C. and the Department of Military Studies.

(16) REPORT OF THE UNIVERSITY HEALTH SERVICE (MEN)

I. *(Geo. D. Porter, M.B., Director)*

Examinations.—All the first and second year students were examined as usual during the early part of the fall term.

Total number of first and second year men	1,310
Number of third and fourth year men voluntarily re-examined	328
Total	1,638
Re-examined by specialists	54
Making a total of complete examinations	1,692

Re-examinations.—Besides these there were a lot of students taking part in Athletics who came in for examination during the year.

While the health of the great majority of our students is excellent yet, this year, there are more physically unfit than usual in the first and second years.

There are thirty of these unable to take physical training or any part in athletics owing to some disability.

1. Those found physically fit for physical training and athletics	92%
2. Those found with some disability requiring supervised or corrective training	6%
3. Those unfit for physical training or athletics	2%

Illness during the year.—We have been comparatively immune from contagious diseases in the University during the year. The few cases of scarlatina and measles were at once quarantined.

Infectious skin diseases which are apt to appear occasionally and spread among the students are controlled by frequently sterilizing towels and by keeping the showers and premises thoroughly clean.

Dispensary Service.—Many calls are made at the Hart House office by students requiring first aid and emergency treatment for accidents received on the campus and elsewhere, and also for advice regarding matters of Health, etc. This often brings to light the existence of communicable diseases and local infections. This is a great help towards controlling the spread of such diseases in the University.

Special Corrective and Supervised Classes.—During the year a number of students temporarily unfit for regular work are enrolled in the above classes.

Education.—A course of emergency and first aid lectures is given by the Director to the first year medical students. Artificial respiration lectures are also given to those taking the course for the diploma of the Royal Life Saving Society.

Illness and accidents during the year for which exemptions from physical training and C.O.T.C. were allowed totalled 482 as compared with 515 last year. These are as follows:

Colds	190	Asthma	1
Influenza	30	Epistaxis	2
Bronchitis	6	Hernia	1
Tonsilitis	10	Frost bite	1
Pharnygitis	14	Skin Diseases	15
Otitis	3	Furunculosis	11
Sinus Infections	3	Ringworm	2
Dental trouble	14	Eczema	2
Pleursy	1	Injuries	109
Pneumonia	3	Fractures	2
Chicken Pox	1	Dislocations	5
Scarlatina	2	Sprains	83
Typhoid fever	1	Concussions	1
German measles	1	Cuts	3
Appendicitis	3	Abrasions	6
Abscess	2	Contusions	9
Arthritis	1	Operations	8
Jaundice	1	Appendicitis	3
Osteo myelitis	2	Nasal	1
Migrine	5	Tonsils	1
Lumbago	3	Goitre	1
Diphtheria	1	Loose Cartilage	1
Eye trouble	1	Vaccinations	2
Gastralgia	12	Inoculations	4
Cardiac trouble	4	For Blood Transfusions to Patients	4
Local infections	10		
Diarrhoea	11	Total	482

REPORT OF MEDICAL ADVISER OF WOMEN

II. (*Dr. Edith Gordon*)

Physical Examinations.—During the year there have been 692 physical examinations made. Of these, 361 were of first year women required to take the prescribed course in physical training. The remaining 331 were voluntary on the part of the students. All colleges, faculties and departments were represented in this latter group. The physical fitness of all the women examined was gratifying.

Group A.—Compulsory Examinations (first year of University College, Faculties of Medicine, Household Science, Architecture, Dentistry, Ontario College of Education):

1. Students physically able to take physical training 83.66%
2. Students requiring supervised or corrective exercises 14.68%
3. Students unable to take physical training (temporarily or permanently) 1.66%

Group B.—Voluntary Examinations:

1. Students physically able to take physical training 87.61%
2. Students requiring supervised or corrective exercises 11.18%
3. Students unable to physical training (temporarily or permanently) 1.21%

The corrective classes, under the able supervision of Miss Coventry, have done excellent work in aiding the students to overcome postural and other defects. This was noted during the re-examination of 75 students in the spring of the year, when improvement was noted. This was considerable in many cases, and quite marked in one or two.

A considerable number of special examinations of the students taking part in the various sports were made, and certificates of physical fitness to participate in basketball, baseball, hockey, and swimming were given.

Among those desiring physical examinations are some students who consider it a part of their college year's programme to avail themselves of this opportunity. There are a few who have had as many as four and five successive yearly examina-

tions, and a considerable number who have had two or three. Among these students are found those who are most appreciative of advice regarding personal hygiene, and who are anxious to correct any defect that may be discovered during the examination.

The defects discovered on physical examination divide themselves into three groups:

1. Preventable and correctable defects 72.03%
   (Poor posture, faulty nutrition, functional spinal curvature, weak feet, constipation, etc.)
   These defects could be corrected by remedial exercises and proper personal hygiene.
2. Defects that could be corrected by treatment, operation, etc 19.05%
   (Diseased tonsils, eye defects, diseased teeth, etc.)
3. Defects that are uncorrectable, but that could be prevented from becoming more marked or developing into acute conditions (organic heart lesions, organic spinal curvature, chest conditions, etc.) 8.92%

Total number of defects 1147

Consultations.—There have been 1,778 consultations. The larger number of these have been with students seeking advice regarding personal hygiene, and how their general efficiency may be maintained. A considerable number have reported at the onset of an acute condition, and have been referred elsewhere for treatment. Emergency treatment for injuries and simple treatment of certain cases is given as the need arises. Co-operation with the family physician in a few cases in the administration of vaccines and hypodermics of iron has been gladly undertaken.

Lectures.—A series of three health talks, based on the needs of the women as revealed by the defects discovered at the physical examinations, were given to the first year students of University College and the Faculty of Medicine. The hours for these talks were taken from the gymnasium periods and credit was granted for attendance at them.

A series of four lectures was given to the students in the Public Health Nursing course.

In the course leading to a Diploma in Physical Education ten lectures in Personal Hygiene were given to the first year, fifteen lectures and demonstrations in First Aid were given to the second year, and twenty-five lectures in General Hygiene were given to the third year.

Needs.—Again the plea is made for larger and adequately equipped quarters for the work of the Physical Education Department. It is impossible to carry out satisfactorily the present requirements under present conditions. Future expansion and development cannot be planned for; and in the face of the outstanding needs, it is disheartening to accomplish so little when, with proper facilities, so much could be done. It is sincerely to be hoped that some provision for the women of the University in the way of adequate gymnasium accommodation will be made in the near future.

REPORT ON ATHLETICS AND PHYSICAL TRAINING

III. (*T. A. Reed, Secretary, Athletic Association*)

(*a*) *Physical Training*—Gymnasium classes to the number of 502 were held for the physical training of the students in the first and second years, over 700 students being enrolled in these classes. Under the Chief Instructor, Mr. Donald Barton, and his able assistants, Mr. W. H. Martin and Mr. J. E. McCutcheon, a systematic course of training was followed with distinct benefit to the students.

Mr. Martin specialised in the track and outdoor work, and Mr. McCutcheon in organised basketball and indoor baseball, these being regarded as options where men were physically fit for the more strenuous exercise.

307 students were enrolled in the Officers' Training Corps, and of these 240 first and second year men qualified for their Physical Training in this important branch of university education.

In co-operation with the Medical Director, Dr. Porter, Mr. Barton conducted special Corrective Classes for those men who were unable to take the regular work. 432 classes were held for 170 men, the majority of whom showed marked improvement as the year progressed.

The Swimming and Life Saving Classes, together with instruction in "First Aid to the Drowning," were continued successfully under Mr. Winterburn, and every encouragement was given to new students to learn to swim. Of the latter 222 classes were held, and 124 men taught to swim, while out of a total of 204 men 189 won the Royal Life Saving Award. As a result of Mr. Winterburn's efficient and systematic training, the University of Toronto ranks among the first in the Royal Life Saving Society Reports.

(*b*) *Intercollegiate Athletics*—The year 1926-27 has been a notable one in Intercollegiate Athletics, and the very fine spirit displayed by all the college teams has added to the prestige of intercollegiate sport.

The University of Toronto won the following Intercollegiate Championships: Senior Rugby, Junior Rugby, Harrier, Track, Senior Hockey, Intermediate Basketball, Boxing, Wrestling and Fencing, Swimming and Diving, Water Polo, and Gymnasium.

McGill University won the Soccer, Tennis and Golf; and the Royal Military College won the Intermediate Rugby and the Intermediate Hockey. The University of Western Ontario won the Senior Basketball, and the Kingston Collegiate Institute the Junior Hockey.

Special mention should be made of the winning of the Senior Intercollegiate Championship in the Rugby Series, and the return of the Yates Cup to Toronto after four years, and of the winning of the Intercollegiate Water Polo Championship for the first time in history. In Rugby, Varsity was again represented in the Senior O.R.F.U. Series, and in Hockey in the Intermediate and Junior O.H.A. The Senior Team again won the Hockey Championship for the eighth year in succession, while the Alumni Team went through the season almost without defeat, winning the Senior O.H.A. Championship, and travelling to Vancouver, won the famous Allan Cup and the right to represent Canada at the Olympic Games of 1928.

The Boxing and Wrestling Team made its annual visits to the United States Military Academy at West Point, and the United States Naval Academy at Annapolis, and sustained their high reputation at these important centres. The Hockey Team played in New York and Boston during the Christmas vacation, meeting Princeton, Harvard and Boston College; while the Basketball, Lacrosse and Swimming Teams also journeyed across the border.

(*c*) *Interfaculty Athletics*—The keen interest taken by the faculties and affiliated colleges in intra-mural athletics is one of the most gratifying features of our system of athletics. It shows that all the interest in the University is not confined to the spectacular. Over one thousand men turned out with the various teams, and provided keen competition for the several cups. The record for the past year is as follows:

Series	Cup	Winners	Total number of men engaged
Rugby	Sir William Mulock Cup	Jr. S.P.S.	272 (13 teams)
Track	W. L. Rowell Memorial Cup	Meds.	70
Soccer	Arts Faculty Cup	O.A.C.	130 (10 teams)
Harrier	J. Brotherton Cup	O.A.C.	56
Hockey	W. T. Jennings Cup	Victoria	194 (16 teams)
Basketball	Hon. Clifford Sifton Cup	Jr. Meds.	170 (15 teams)
Boxing, Wrestling and Fencing	Francis Davison Cup	O.A.C.	54
Indoor Baseball	A. G. Spalding Cup	Sr. Dents	121 (11 teams)
Swimming	A. M. FitzGerald Cup	U.C.	36
Water Polo	H. P. Eckardt Cup	Jr. S.P.S.	102 (8 teams)
Indoor Track	Toronto Cricket Club Cup	U.C.	35
Rowing		S.P.S.	36 (4 teams)
Tennis	F. Y. McEachren Cup (University Champion)	G. Nunns (U.C. III)	95
Swimming	B. Durnan Cup (University Champion)	J. M. Goss (S.P.S. II)	35
Gymnasium	H. A. Wilson Cup	Meds.	10 (5 teams)

The Athletic Directorate for 1926-27 consisted of Professor M. A. Mackenzie, President; Professor C. H. C. Wright, Faculty members; Dr. J. A. McCollum and Dr. W. Easson Brown representing the Athletic Advisory Board; and the following, elected by the undergraduates: Mr. W. M. Master, Mr. C. A. Morrison Mr. D. B. Peeler, Mr. E. Shute and Mr. J. L. Uren. Mr. F. S. Daly represented the Students' Administrative Council.

DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN

IV. (*Miss I. V. Coventry*)

During the session 1926-1927 there were 298 undergraduates (women) enrolled in the Physical Training classes and 343 in the Swimming classes.

First year students enrolled in Compulsory Physical Training	247
Undergraduates, all years, in Corrective and remedial classes	32
First year undergraduates in Diploma class in Physical Training	31
Second year undergraduates in Diploma class in Physical Training	14
Third year undergraduates in Diploma class in Physical Training	10
Fourth year undergraduates in Diploma class in Physical Training	5
Undergraduates, all years, in Fencing class	24
Athletic Teams	
University College Basketball Team	24
Victoria College Basketball Team	24
St. Michael's College Basketball Team	16
Faculty of Medicine Basketball Team	16
Undergraduates from University College	203
" " Victoria College	40
" " Trinity College	4
" " St. Michael's College	16
" " Faculty of Medicine	17
" " Faculty of Household Science	40
Approximate number of class periods of instruction in the gymnasium during the session	660
Swimming:	
Total number of students, all colleges, faculties and departments using the swimming pool during eight months	385
Students from University College	180
" " Trinity College	19
" " Victoria College	110
" " St. Michael's College	13
" " Faculty of Medicine	21
Administrative Staff (Wednesday nights)	42

The Physical Training Classes were composed of first year women students from University College, the Faculty of Medicine, the Faculty of Household Science, voluntary students from University College, Trinity College, Victoria College, and St. Michael's College.

To fulfil the regulation of two class periods a week in the gymnasium for first year compulsory physical training it was necessary to plan fourteen (14) class periods a week to accommodate all the students, as many could not attend the regular class periods assigned for the compulsory class.

Additional class periods of special instruction in corrective and remedial exercises were arranged to suit the students who were medically advised to take prescribed work. These classes were composed of 10 to 12 students who attend two periods per week under careful supervision. The beneficial results derived were most gratifying.

The only available space where this essential part of the work can be carried on is in an extremely small and poorly ventilated room, the gymnasium being reserved for the larger classes which are conducted at the same time.

To meet the many appeals of the university athletic teams and clubs for organised games in the gymnasium it was necessary to assign practice periods at times most inconvenient to the various teams.

The gymnasium was used for basketball and baseball teams at eight o'clock in the morning and five to six in the afternoon during five days a week, and frequently from one to two o'clock at noon.

Diploma Course in Physical Training

Due to the lack of room accommodation for the practical and theoretical work it was difficult to arrange satisfactory class periods to suit the sixty students who were registered in the Physical Education Course leading to the Diploma by the University.

Notwithstanding the numerous handicaps, the students of the fourth year have carried on arduously through the many conflicts to a successful termination. It is gratifying to state that the five students have successfully attained the requirements of the Physical Education Course.

One of the helpful features of the course for the past year has been the co-operation of a number of Physical Instructresses in the City Collegiates who were granted permission to arrange, under supervision, special class periods for the practice teaching prepared by the third and fourth year students of the diploma course.

A series of lectures on Applied Anatomy and Kinesiology was given to the students of the second year.

Physiology of Exercise, Anthropometry, General Hygiene, History of Physical Education, Theory and methods of teaching were given to the students of the third and fourth years.

Report of the Ontario College of Education Physical Training During the Past Eight Months, Session 1926-1927

Number of women students in attendance at the gymnasium classes	100
Number in attendance at the swimming classes	96
Number of class periods of instruction in the gymnasium throughout the year	240

Additional theory lectures were given in connection with the course.

During the fall term the class was divided into two sections, each was given forty-five (45) minutes of instruction in practical gymnastics four days per week. Additional instruction of one hour a day in team games was given during the month of May.

A written report, which was received from the Swimming Instructor, notes a very creditable attendance and splendid results attained by the students attending the swimming classes.

(17) REPORT OF THE WARDEN OF HART HOUSE

(J. B. Bickersteth, Esq., M.C., M.A.)

The Staff—Early in February the Comptroller, Mr. J. R. Gilley, was ordered by his doctors to take a complete rest. He has now been confined to his bed for several months. In March Mr. J. Hornal, the Warden's Secretary, became seriously ill and went into hospital, where he still is. It is difficult to exaggerate what even the temporary loss of these two members of the administrative staff has meant to Hart House. With the growth of undergraduate and graduate activities during the past few years the administration of Hart House has become greater in volume and infinitely more complicated. Under Mr. Gilley's direction the management of the various departments of Hart House has not only kept pace with its rapidly developing life but has been placed on a sound business footing. Mr. Hornal has been responsible for the growing interest of senior members in the life of this House. Five years ago our graduate and faculty members numbered three or four hundred persons. To-day our senior membership is between eight hundred and nine hundred men—a remarkable expansion which is largely the result of the care and thought which Mr. Hornal has devoted to their interests. As soon as it was known that the Comptroller would be absent for some months, steps were taken to find an Assistant Comptroller and Mr. W. R. Cowan, who graduated from the Faculty of Applied Science and Engineering in 1924 and was occupying a position on the staff of that faculty, was appointed to this position. Mr. Cowan was faced with an exceptionally difficult problem in taking over the administration of Hart House in the middle of the academic year, but from the first he has shown that he is fully capable of the task, and is carrying out his new duties with great ability.

Debating—The most outstanding event in the life of Hart House during the past year has been the visit of the Prime Minister, the Rt. Hon. W. L. Mackenzie King, who came to Hart House on the evening of 4th February and took part in a debate with the men on the floor of the House. The resolutions dealt with the conclusions of the Committee on Imperial Relations at the Imperial Conference held in London last autumn and Mr. King not only delivered a first-rate debating speech but made a considered pronouncement on a subject of national importance. Three weeks later Hart House was honoured with a visit from the Hon. Hugh Guthrie, Leader of the Opposition, who also took part in a similar debate and spoke in favour of a resolution approving of the Maritime Claims. Mr. King and Mr. Guthrie both procured large majorities for the resolution they supported. The fact that the Prime Minister and the Leader of the Opposition should consider it worth while to take part in such debates and make speeches which were widely quoted in the press throughout Canada and in other parts of the Empire is itself a tribute to the undergraduates of this University. It is not only in accordance with the best traditions of political life in England, where the leading statesmen of the country are frequent visitors at the Oxford and Cambridge Unions, but it may also be regarded as a highly significant fact in the public life of Canada.

Music—The usual series of Sunday Evening Concerts has been held in the Great Hall during the winter. These concerts, as also the Friday Afternoon Recitals in the Music Room, have met with conspicuous success, and once again we have to extend our most sincere thanks to the musicians of Toronto who have always been ready to give of their best to Hart House. The Songsters, which were again held on certain Sunday Evenings in the Music Room under the direction of Mr. Campbell McInnes, are becoming an established tradition and were attended by a large and enthusiastic number of students. An innovation this year in the musical activities of the House was the holding of two lectures on Wagner's "Ring". These were given by Mr. Viggo Kihl, and were illustrated

both by the piano and by records on the Orthophonic gramaphone. The interest which these two lectures aroused among the undergraduates, even though they were held at a late date in the year, would indicate that further experiments of a similar kind might well be tried.

The Sketch Committee—The Sketch Committee has felt for some time that it was desirable to give members of Hart House the opportunity of becoming familiar with the great pictures of the world through the medium of coloured reproductions. A series of such reproductions published at a reasonable price was purchased during the summer, and in October a small room formerly used for the Shop and opening out of the Sketch Room was by means of a few minor alterations made to serve as a miniature picture gallery. Here, throughout the past year, exhibitions have been held illustrating various Schools of Painting, such as the Venetians of the Fifteenth and Sixteenth Centuries, the Spanish or the Dutch School. Reproductions of the outstanding pictures of these Schools were shown and notes dealing with the artists and their work were posted on the walls. The initiation and carrying out of this plan, which has proved extremely popular with the men, is due to Professor H. Wasteneys, who has served as Chairman of the Sketch Committee during the last three years. Professor Wasteneys has now given up the chairmanship of this Committee and has consented to serve on the Board of Stewards as one of the President's representatives. The interesting developments in the two Sketch Rooms are to a great degree the result of his enthusiasm, and members owe him a great debt of gratitude for the time and labour he has so freely devoted to the interests of art in Hart House. The usual fortnightly exhibitions in the large Sketch Room have attracted a larger number of members than in any previous year, the annual exhibition of pictures executed by members of Hart House arousing especial interest. Steps will be taken during the coming summer to improve the lighting of this room. The art classes were regularly attended by a large group of students, and the work accomplished reached a high standard. The Print Fund was continued this year and a sum of four hundred and twenty dollars was subscribed by those interested in the work. This will be devoted to the furtherance of art in Hart House in whatsoever way the Committee may think best. Several purchases of pictures were made during the year, notably pictures by A. J. Casson, F. Carmichael and E. Holgate. A small water colour by J. W. Morrice was also procured.

The Student Christian Association—During the past year the development of the religious life of the House, under the guidance of our Chaplain, the Rev. F. J. Moore, has been most marked and gives great cause for encouragement. Regular celebrations of the Holy Communion have been held for the Anglican students and also for those belonging to the United Church. Numerous informal services have taken place in the Chapel and a series of addresses by well-known members of the staff have been given in the Music Room. It is a significant fact that the Chapel is situated in the very centre of the building, and though it is impossible to gauge the influence of the quiet unobtrusive work of the Chaplain on the lives of members of Hart House, it is none the less real.

Visitors—Among prominent visitors to Hart House during the last twelve months have been the following: Lord Salisbury, The Bishop of London, Mr. Arthur Hill, Sir Alfred Mond, Mr. Leonard Rees, Professor Noël (Louvain University), Lord Darling, Mr. Matheson Lang, Mr. Henry Guppy (John Rylands Library), M. Camille Gaspar (Brussels), Mr. Eugène Morel, Mr. Lowell (President of Harvard), Lord Elgin, Sir Frederick Whyte, Mr. Eugène Goussens, Mr. Lowell Thomas, Mr. Cecil Harmsworth (Proprietor of *The Daily Mail*), Mr. Bruce (Prime Minister of Australia), Mr. d'Oyly Carte, Sir Herbert Ames, the Hon. Hugh Guthrie, Professor Grierson (Edinburgh), Professor Conway (Manchester), Mgr. Camille Roy (Rector of Laval), Sir Wyndham Deedes, Mgr. Baudrillart, the Rev. Francis Duffy, Dr. Campbell (President of the

University of California), Mr. Duncan Hall (Australia), Sir Charles Sherrington (Oxford), Col. M. J. Mitchell (Carnegie U.K. Trust), Mgr. Tisserant (Vatican Library).

The list of universities, which demand information about Hart House or send delegates to visit it, is formidable. This year we have received visits for several days from three representatives of Princeton and from three representatives of Cornell. The interest which Hart House arouses in all such visitors appears to be based not only on the architecture of the building or its social life, but also, and perhaps to a greater extent, on what might be called its intellectual and educational activities.

The Social Life of the House—It is impossible to keep any record of the number of persons who daily use Hart House. It is well filled all day, but the busiest part of the day is between 12 and 2 p.m. and 5 and 11 p.m. As a meeting-place for men of all Faculties and Colleges it is a unifying influence of the highest value in the University. Quite apart from its casual use by hundreds of students, the demand for rooms where clubs and organisations can hold their meetings is steadily increasing. In January 1925, for instance, there were one hundred and four bookings for rooms and in January 1927 there were one hundred and forty-one. Lack of accommodation is a real difficulty. The senior members of the House continue to take advantage of the privileges offered to them on Monday and Thursday evenings when the Gymnasium is reserved for them, and with each succeeding year a larger number of graduates make use of the Graduates' Dining Room. The usual social functions, including the Annual Fancy Dress Ball, were held in Hart House during the winter. The hour of closing for official dances was extended from 1 a.m. to 2 a.m. The Graduates' Ball was held again on New Year's Eve and proved a great success. During the Christmas vacation Hart House entertained the boys and men of the University Settlement for the first time. The Gymnasium and Swimming Pool proved very popular and supper was served in the Great Hall.

The Great Hall—The operation of the Great Hall is in itself a business of great magnitude. In full term time the number of ordinary meals served in Hart House averages about 1,450 daily, of which 1,250 are student meals served in the Great Hall. There is also an average of about 200 special meals (*i.e.*, dinners and small parties) served daily in Hart House, making a daily total of some 1,650 meals. From October to March there is some large function in Hart House almost every week, and in some weeks there are more than one. These special functions might bring the number of meals served in Hart House on that particular day to well over the 2,000 mark. The total number of meals served in Hart House during an academic week averages about 9,300. The number of ordinary student meals served in the Great Hall during the academic year is about 200,000, and the total number of meals of all kinds served in all dining-rooms in Hart House during one year is 269,000. In spite of this large volume of business practically no complaints are ever received, and the fact that more undergraduates are using the Great Hall this year than last is in itself adequate proof of their appreciation. Much of the credit for this satisfactory state of affairs is due to Mr. W. H. Campbell, Superintendent of the Great Hall, and to his staff.

Conventions—During the coming summer several conventions are to be held in the university buildings, and in every case meals are to be served to the delegates in Hart House. These conventions are the Canadian Medical Association, the American Library Association, the World Federation of Education Associations and the Mining and Metallurgical Congress. Though Hart House is glad to do what it can in this respect, it should be borne in mind that the serving of meals to many thousands of delegates during the summer imposes a

considerable strain on a staff which is required to deal with exceptionally heavy work throughout the winter months.

Committees—With the present year Dr. V. E. Henderson severs a connection of eight years with the Board of Stewards. During all this time Dr. Henderson has been a regular attendant at the meetings of the Board and also of the Finance Committee. It is difficult to express what a great debt all members of Hart House owe to him not only for his wise guidance during these early years but also for his unfailing readiness to give of his time and experience to the affairs of Hart House. Though pressure of work has necessitated Dr. Henderson's resignation from the Board of Stewards, he has consented to continue to serve on the Finance Committee. Once again I must express my deep obligation to all members of Hart House for their whole-hearted co-operation and more especially to the undergraduate, graduate and faculty members of the various committees.

(18) REPORT OF THE DIRECTOR OF THE CONNAUGHT LABORATORIES

(Dr. J. G. FitzGerald)

This is the thirteenth annual report in which is epitomized some of the features of the work of the Connaught Laboratories for the academic year 1926-27. Last year brief reference was made to the fact that the School of Hygiene building then being erected through the benefaction of the Rockefeller Foundation was approaching completion. The equipment of the university sections of these laboratories was transferred to the new building in the autumn of 1926. In December, the teaching departments of Hygiene and Preventive Medicine, Public Health Nursing, the sections of Epidemiology and Vital Statistics and Physiological Hygiene of the School of Hygiene completed the occupation.

The quarters thus made available for the various divisions (Research, Antitoxin and Insulin) of these laboratories are splendidly arranged for the conduct of the work which is carried on therein and in every way their proximity is exceedingly advantageous from the viewpoint of research and teaching. It may not be out of place to point out again that in no other institution of higher learning in the world is a serum institute an integral part of a School of Hygiene within such an institution, as is the case in the University of Toronto, where the School of Hygiene and the Connaught Laboratories serve a threefold purpose namely: research, teaching and medical public service. The formal opening of the School of Hygiene Building took place on Thursday, June 9th, 1927, when at a meeting in Convocation Hall, Sir George Newman, K.C.B., D.C.L., LL.D., Chief Medical Officer of the Ministry of Health of England and Wales, delivered an inaugural address. This was followed by an inspection of the building.

Staff Changes—The present year has witnessed a very marked increase in personnel. The number of workers is now 90 full-time and 8 part-time (total 98) compared with 66 full-time and 8 part-time (total 74) in June 1926. The Director of the Laboratories, at the request of the Department of Health, Canada, represented Canada at the International Rabies Conference convened in Paris in April 1927 by the Health Organization of the League of Nations. Dr. C. H. Best, Assistant Director, who has been on leave of absence for a year and a half while carrying on post-graduate work in England and in various countries in Europe, returned to Toronto in December 1926. Dr. D. A. Scott has been made an Assistant Director. Dr. A. L. McKay and Dr. A. M. Jeffrey have received appointments as Clinical Associates, part-time. Dr. Elizabeth Chant Robertson was appointed a Research Assistant. The appointment of many additional workers in the antitoxin and insulin divisions has been noted.

Research Activities—The year has been only fairly satisfactory from a research standpoint on account of the interruption and dislocation which was occasioned through the movement of the university section of the Laboratories into the new quarters. Despite this, however, much valuable work has been done and useful results achieved. The bovine tuberculosis research work mentioned in the report for 1925-26 has been continued under Dr. Caulfeild's direction. Dr. Moloney, with Dr. Edith Taylor and Miss C. J. Fraser, has been very active in the investigation of detoxification of bacterial toxins; also in the further studies of toxoid and of certain problems arising out of its production and use. Dr. Donald T. Fraser and Dr. Elizabeth Chant Robertson have been responsible for the conduct of investigations relating to scarlet fever susceptibility, immunity and serum therapy. Dr. Defries and Dr. McKinnon have made interesting and important observations on certain viruses. Some of their results will soon be published. Both Dr. Moloney and Dr. Scott have been engaged in the study of certain problems of an immunochemical character. Other research work is in progress which will be reported upon in due course.

Public Services—The antitoxin and insulin divisions have this year established new records for volume of work. The products distributed are shown in the following list:

Anti-meningococcic serum, anti-rabic virus, Dick test outfits, diphtheria antitoxin, diphtheria toxoid, insulin, normal horse serum, paratyphoid vaccine, scarlet fever antitoxin, scarlet fever toxin, Schick test outfits, tetanus antitoxin, type I pneumococcus serum, typhoid vaccine, vaccine virus, whooping cough vaccines.

The countries in which one or more of the above has been distributed are:

British West Indies (Barbados, Bermuda, British Guiana, Jamaica, St. Lucia, Trinidad), Dominion of Canada (all provinces), Ceylon, Colombia, Cuba, Czechoslovakia, Finland, India, Irish Free State and Northern Ireland, Japan, Newfoundland, New Zealand, Portugal, Roumania, San Salvador, South Africa, Spain, United States, Uruguay, Venezuela.

Further addition to buildings, etc., at the University Farm have been made during the year and the necessary repairs and alterations have been undertaken. The Director is very deeply indebted to the chairman of the Connaught Laboratories' Committee of the Governors and to all members of the staff of the Laboratories for their most whole-hearted and enthusiastic support and co-operation at all times.

(19) BIOLOGICAL MUSEUM AND ROYAL ONTARIO MUSEUM OF ZOOLOGY

(Professor B. A. Bensley)

During the year 1926-27 the zoological collections were greatly augmented by donations, purchases, and material resulting from expeditions undertaken by members of the staff.

The following were among the more important donations: a collection of birds and mammals of India from Major E. H. Pooler, Toronto; a mounted specimen of an African lion cub from Miss Aileen Hughes, Lindsay, Ont.; several ducks from Mr. F. C. Clarkson, Toronto; a considerable collection of the introduced European starling, together with a number of birds taken on the north shore of the Gulf of St. Lawrence, from Mr. H. F. Lewis, Ottawa; several specimens of Pacific coast fish from Mr. Chas. F. Goodrich of the Sooke Harbour Fishing and Packing Co. Ltd. and R. Spouse and Sons Ltd. of Victoria, B.A.; several books and some bird skins from Mr. J. H. Fleming, Toronto; several

birds from Mr. Geo. H. Corsan, Islington, Ont.; skin and horns of Dall's mountain sheep from Bishop I. O. Stringer of the Yukon Territory; a mounted specimen of Cory's least bittern from Mr. C. K. Rogers, Toronto; a road runner from Mr. A. K. Boyles, Bexar Co., Texas; coloured lantern slides from Canadian National Parks Branch, Ottawa; numerous specimens from the Parks Department, City of Toronto, the most valuable of which were an elephant, ocelot, cassowary, hoary marmot, pika, demoiselle crane, night heron.

Donations were also received from J. H. Ames, W. G. Arnott, E. H. Bensley, N. K. Bigelow, Fred Blackburn, H. H. Brown, Armon Burwash, Dr. J. A. Campbell, Wm. Campbell, Miss M. Chambers, Major L. S. Dear, Mrs. W. B. Disher, Mrs. J. H. Garnier, Dr. Paul Harrington, Mrs. J. A. Harvey, H. B. Haugh. G. E. Kennedy, Miss J. Kings, Mrs. E. J. Kingsley, W. J. LeRay, R. V. Lindsay, J. A. Lloyd, T. F. McIlwraith, H. H. MacKay, W. G. Neff, Police Sgt. A. Ovens, Lloyd Peters and Wm. Nugent, Brig.-Gen. G. H. Ralston, Dr. F. A. E. Starr, Dr. F. N. G. Starr, L. Sternberg, Mrs. A. Rolls, John Townson, S. L. Thompson, Allan Twining, L. Watson, W. P. Young.

To secure specimens of birds and mammals not represented in our collections a number of small collections were purchased at a nominal valuation, including a collection of the birds of the Muskoka region from Mr. A. Kay of Port Sydney, Ont.; some Pacific coast birds from J. A. Munro, Okanogan Landing, B.C.; a few Manitoba mammals from Stuart Criddle, Treesbank, Man.; Atlantic Coast birds and mammals from C. K. McLeod, Bradore Bay, P.O. Elton Jones of Harrington Harbour, P.Q., and Allan Moses of Grand Manan, N.B.

A mounted Impala and seven heads of other African antelopes were also purchased from G. L. Pop of Vancouver, B.C., and a considerable collection of birds' eggs from Mr. Walter Raine, Toronto.

Through the kindness of Mr. Wallace Havelock Robb of Belleville, Ont., we were able to exhibit a notable collection of paintings of birds of Eastern Canada by Major Allan Brooks of British Columbia. This collection has since been presented to the Museum.

Mr. John Mossop of Allcock, Laight and Westwood, Mr. Chas. N. Candee and Mr. W. A. Brodie kindly loaned to the Museum several objects forming part of a special angling exhibit.

Members of the museum staff made collections during the summer of 1926, amounting to 378 specimens, chiefly birds and mammals. Moulds and colour sketches of fifty species of marine fishes of the Pacific coast were also secured as a result of an expedition sent out for that purpose.

The Museum also acquired the pamphlet collection, some books, coloured lantern slides, journals and other records of the late C. W. Nash.

The library was further augmented by the receipt from other museums, scientific societies and individuals of 284 pamphlets.

(20) STATEMENT REGARDING THE ROYAL ONTARIO MUSEUM OF GEOLOGY

(Professor E. S. Moore)

A great variety of specimens has been added to the collections of the Museum of Geology during the past year. Many foreign specimens have been received from mines in various parts of the world and a collection of unusual interest is a suite of specimens of the remarkable platinum deposits which are now being developed in South Africa. The exhibits obtained by donation, exchange, collection, and purchase are as follows:

By donation;

Gold ores, Barry-Hollinger Mine, Boston Creek, Ontario, by Mr. R. Fennell, Toronto. Goudreau area, Ontario, by Dr. T. L. Gledhill, Toronto. Iron ores,

Morroco, Professor A. P. Coleman. Hematite from Wallbridge Mine, Hastings County, Ontario, by Mr. Campbell Wallbridge. Platinum ores and associated rocks from South Africa, by Dr. A. H. Hall, Assistant Director of the Geological Survey of the Union of South Africa. Phosphates from British Columbia, Utah, and Idaho, by Mr. L. Telfer, Consolidated Mining and Smelting Company of Canada. These specimens illustrate the occurrence of phosphates in British Columbia similar to those in the western States. Building stones—Polished Queenston dolomite from Queenston, Ontario, by Canada Crushed Stone Corporation, Limited. Amber specimen from Cedar Lake, Manitoba, by Mr. A. C. Craig. Petroleum—Turner Oil field, Alberta, by Mr. F. H. Moodie. Weathered limestone from Fenelon Falls, Ontario, by Mr. Austin Neame. Potash salted from Alsace, France, by Professor J. Jung, Strasburg.

A large collection of ores and other specimens of economic interest from various parts of the world was presented to the Museum by the Imperial Institute, London, England.

By exchange;

Suite of anthophyllite-asbestos specimens from Georgia, U.S., by Professor H. Ries, Cornell University, Ithaca, N.Y. Oolitic iron ores from Clinton, N.Y., by Professor N. C. Dale.

By collection;

Copper ore from Rio Tinto, mercury ore from Almaden, and iron ores from Bilbao, Spain, by the Director.

Gold ores from Hedley and copper ores from Copper Mountains, B.C., by Mr. P. G. Paterson.

By purchase;

Gold ores from Madagascar, Transylvania, Mexico, California, Colorado, Oregon and Canada. Corundum from Madagascar, Anhydrite and apatite from North Burgess, Ontario. A collection of ores and other specimens of economic interest from various countries of the world. Relief maps of the southern Appalachian Mountains and the Monteregain Hills, Quebec.

(21) STATEMENT REGARDING THE ROYAL ONTARIO MUSEUM OF PALÆONTOLOGY

(*Professor W. A. Parks*)

During the year several very important additions have been made to the collection of vertebrate fossils. The skeleton of the rare *Thescelosaurus* with the only head ever found in America has been mounted, also, the major part of the skeleton of a new species of gigantic carnivorous dinosaur, the skin and plates of a large armoured dinosaur, and the skeleton of a new species of *Champsosaurus* from the Edmonton formation. An addition of great value is the fore part of the body and the head of the bird-like dinosaur *Ornithomimus:* this head is the only complete example ever found in the whole group of the *Ornithomimidae.*

The chief additions to the invertebrate fossils are the collections of Triassic fossils from Nevada and the specimens collected from the Trenton, Collingwood, and other formations of Ontario.

The more important acquisitions during the year are as follows:

By donation;

Polished slab with Stromatopora—B. L. Bowling, Mason City, Iowa.
Specimen of Calamites—John T. Bushby, North Sydney, N.S.
Fossils from North Africa—Professor A. P. Coleman.
Phacops rana from Thorndale—Professor Currelly.

Halysites catenulatus—Mr. T. L. Gledhill, Toronto.
Stigmaria from St. Louis—J. Hale, Toronto.
Favosites gothlandica—H. B. Ledyard, Haileybury, Ont.
Poleumites crenulata from Shelburne—Professor Moore.
Collection from Lockport Limestone—Austin Neame, Queenston, Ont.
Triarthrus eatoni—N.Y. State Museum, Albany, N.Y.
Large collection of Edmonton fossils—J. O. G. Sanderson, Univ. of Toronto.
General fossil collection—Walter Segsworth, Toronto.
Skeleton of ox—Alex. Smith, Toronto.
Specimen of Lepidodendron—C. J. Stalker, Toronto.
Rare genera of Bryozoa—Dr. Bassler, U.S.N.M., Washington.
Perisphinctes pseudogigas from England—Dr. T. L. Walker.
Specimens from coal area, Matagami River, Ont.—R. J. Watson, Toronto.
Mammoth tusk from Toronto—J. B. Wolfe, Toronto.

By exchange;

Two skeletons of Merycodoidon gracilis, two Stylemys, and one Promerycochoerus in exchange for head of Lambeosaurus lambei—Walker Museum, University of Chicago.

By collection:

Large series of Trenton, Collingwood, and other fossils from Ontario—The Director and staff.
Sinuites cancellatus from Don valley—Helgi Johnson, University of Toronto.

By purchase;

Large series of conodonts—R. R. Hibbard, Buffalo, N.Y.
Mammoth tusk from North York—W. O'Sullivan, Todmorden, Ont.
Mid-Triassic Ammonites from Nevada—Percy Train, Lower Rochester, Nevada.
Rare cephalopods and other fossils—Ward's Natural Science Establishment, Rochester, N.Y.

(22) STATEMENT REGARDING THE ROYAL ONTARIO MUSEUM OF MINERALOGY

(Professor T. L. Walker)

The Royal Ontario Museum of Mineralogy has steadily developed during the year. A beginning has been made in the establishment of a section for Crystallography. A few new cases have been placed in the gallery though most of the recent additions must for the present be placed in storage.

Notable presentations have been made by the Mining Corporation of Canada, J. G. Dickenson, Esq., Dr. J. M. Bell, F. A. C. Shaw, Esq., P R. Drummond, Esq., and the Imperial Institute. A large and interesting collection, principally from the O'Brien mine in Cobalt, was presented by permission of the Honourable Senator M. J. O'Brien by J. Victor Culbert, Esq., in the names of his brother, the late M. T. Culbert, and himself.

Important exchanges have been made with the United States National Museum, the British Museum of Natural History, the Museum National d'Histoire Naturelle (Paris), the Geological Survey of Korea, Professor Alberto Pelloux, Professor F. Slavik, Lt.-Colonel L. Vesignie (Fontainebleau), M. Vonsen, Esq., and the Geological Survey of the Union of South Africa, in addition to numerous exchanges of lesser magnitude.

The Directors feel that it is desirable to establish in the near future a series

of publications in which the growth of the institution may be recorded from year to year and at the same time provide for the publication of at least a part of the investigations of the museum staff. At present the record of work done is scattered so that the museum does not receive credit for its contribution to science.

(23) STATEMENT REGARDING THE MUSEUM OF ARCHAEOLOGY

(Professor C. T. Currelly)

The past year has again been a time of extraordinary growth for the Museum.

In the department of European prehistorics an extremely fine collection of British, French and Italian pieces has been obtained, the British stone age series, particularly, surpassing our expectations. Specimens of unusual quality illustrating the bronze age have also been acquired, the most remarkable being an Irish lance-head decorated with gold, found in Northumberland.

Several of the famous ripple-flake Egyptian knives are the most highly developed examples of flint-working of all prehistoric times. Some interesting faience and other small objects have also been added to the Egyptian collection.

The classical department has made a marked advance, having received three very important vases of the finest workmanship of the fifth century B.C., and a considerable number of objects of the other periods. Two bronze helmets, one found at Marathon and one at Thermopylae, excavated by Lord Nugent in 1820, are very interesting additions. A noteworthy exhibit presented by Hamilton B. Wills is the large stone sculpture of Mithras slaying the bull, at one time in the possession of S. H. Janes. The coin collection has been considerably enlarged, especially by fine Greek silver. The outstanding addition is a Syracusan decadrachm signed by the artist, Euainetos: this coin is considered the most beautiful ever struck, and ours is one of the finest in existence, the condition being perfect. The Roman-British section has been growing with great rapidity, particularly from finds made in the City of London, of pottery, ironwork, and small objects of daily use.

Several important additions have been made to the Anglo-Saxon collection; and of extreme interest is a group of objects illustrating the domestic life of the British during the mediaeval and renaissance periods, obtained from the excavations in London.

In the department of arms and armour we have had one of our best years. The finest pieces obtained are four important suits, including the well-known Radziwill cap-a-pie suit, and a considerable number of exquisitely wrought swords of the fifteenth and sixteenth centuries. The year's additions give us three large cases of arms and armour.

Our remarkable Chinese collection continues to develop. An incredibly wonderful series of early bronze sacrificial vessels of the Chou dynasty has come from Honan; these are of the greatest value, as they were found in sets. Of smaller bronzes, we have received a great quantity. Not less important than the bronze sets are several superb ceremonial jades of about 1000 B.C., the finest that I have as yet seen.

An interesting group of Japanese potteries and excellent specimens of Japanese metalwork have been received.

Additions have been made to the textiles, and to the general ceramic collection.

In the department of printing and the book, we have made extraordinary progress by securing a large number of illuminations, notably one hundred and

fifty initial letters, and a considerable collection of Dürers, Rembrandts, and other early prints, together with a large addition to our series by Piranesi, Hogarth, Callot, Canaletto, and other famous print-makers.

The furniture collection has again received numerous exhibits from the T. Eaton Company, the most dramatic being a large cabinet of ivory and ebony of Portuguese Goa work.

In the department of ethnology the acquisitions have been very numerous: jades from New Zealand, African material, American Indian specimens.

Cataloguing, case-making and teaching have gone on as usual. A new type of case, with glazed drawers that the public may pull out, has enabled us to display great quantities of Ontario Indian material. The teaching has been extremely successful, the number of school classes given instruction having almost doubled last year's. The congestion in the galleries is becoming almost impossible, and makes all our work exceedingly difficult; it is the most congested museum that I have ever seen.

APPENDIX B

(1) Enrolment in Colleges.
(2) Enrolment in University subjects.
(3) Registration in Courses in the Faculty of Arts.
(4) Registration for Graduate Courses.

(1) ENROLMENT IN THE COLLEGES

The students in University College were enrolled as follows:

	Greek	Latin	Ancient History	English	German	Scientific German	French	C. & F. French	Orientals			Ethics
									Heb.	R.K.	Hist.	
First Year—												
Pass.....	12	198	67	285	19	66	201	62	31	116		
Honours.....	15	46	49	75	26		82		1			6
Second Year—												
Pass.....	8	41	8	193	13	32	158	41	10	80	11	45
Honours.....	8	19	9	47	20		40		1			5
Third Year—												
Pass.....	4	17	10	120	9		93	18	5	46	11	45
Honours.....	11	9	25	32	5		31		1			10
Fourth Year—												
Pass.....	9	10	9	97	4		75	17	4	50	2	34
Honours.....	6	5	26	35	7		27		3			7
Totals—												
Pass.....	33	266	94	695	45	98	527	138	50	292	24	124
Honours.....	40	79	109	189	58		180		6			28

NOTE.—In addition, these departments of the College provided instruction to students enrolled in other Faculties than Arts and in the Teachers' courses:

English 94; German 102; French 244; Ethics 46.

The students in Victoria College were enrolled as follows:

	Greek	Latin	Ancient History	English	German	French	Orientals	Ethics
First Year—								
Pass	8	55	33	103	8	62	14	..
Honours	4	43	42	55	15	61	..	4
Commerce	..	..	..	..	..	15	..	..
Second Year—								
Pass	3	21	2	121	7	69	5	27
Honours	9	20	9	34	7	27	..	4
Commerce	..	..	..	..	..	8	..	..
Third Year—								
Pass	2	13	4	61	2	36	4	27
Honours	2	8	2	19	8	21	..	5
Commerce	..	..	..	..	..	5	..	..
Fourth Year—								
Pass	2	8	4	40	1	24	2	6
Honours	1	2	2	25	5	13	..	6
Commerce	..	..	..	..	..	7	..	..
Totals—								
Pass	15	97	43	325	18	191	25	60
Honours	16	73	55	133	35	122	..	19
Commerce	..	..	..	..	..	35	..	.

The students in Trinity College were enrolled as follows:

	Greek	Latin	Ancient History	English	German	French	Orientals	Ethics	Anc. & Or. Hist.
First Year—									
Pass	5	43	2	53	6	39	1	..	..
Honours	3	12	12	13	2	13	..	..	..
Second Year—									
Pass	2	23	..	34	..	30	..	..	..
Honours	..	2	..	7	2	4	2	..	2
Third Year—									
Pass	3	6	..	13	..	11	..	7	..
Honours	..	2	..	2	..	4	..	..	..
Fourth Year—									
Pass	..	5	..	13	..	7	..	3	..
Honours	..	..	..	5	..	1	..	..	..
Totals—									
Pass	10	77	2	113	6	87	1	10	..
Honours	3	16	12	27	4	22	2	..	2

The students in St. Michael's College were enrolled as follows:

	Greek	Latin	Ancient History	English	German	French	Philosophy	Ethics
First Year—								
Pass	7	55	3	54	3	49	..	..
Honours	2	11	2	12	2	15	1	..
Second Year—								
Pass	2	27	..	44	..	39	14	..
Honours	2	2	3	8	..	9	6	6
Third Year—								
Pass	1	21	1	28	..	27	21	1
Honours	2	4	2	6	1	10	5	5
Fourth Year—								
Pass	1	10	..	17	..	17	11	11
Honours	..	2	..	6	..	7	4	3
Totals—								
Pass	11	113	4	143	3	132	46	12
Honours	6	24	7	32	3	41	16	14

(2) ENROLMENT IN UNIVERSITY SUBJECTS

The following tables exhibit the numbers attending lectures in University subjects, together with the number of those taking the practical work in the laboratories:

DEPARTMENT OF MATHEMATICS

	Pass	Pass and Honours	Honours
Faculty of Arts—			
First Year	394	108	76
Second Year	83	112	39
Third Year	35	12	30
Fourth Year	11	10	12
Faculty of Medicine—			
First Year	11	...	...
Second Year	3	...	...
Third Year	3	...	...
Faculty of Applied Science and Engineering—			
First Year	...	163	...
Second Year	...	84	...
Totals	540	489	157

DEPARTMENT OF PHYSICS

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
First Year	345	..	166	166
Second Year	14	..	92	91
Third Year	2	..	33	35
Fourth Year	24	..	12	23
Faculty of Medicine—				
First Year	..	140	..	140
Second Year	..	28	..	28
Third Year	..	32	..	32
Fourth Year	..	6	..	6
Faculty of Forestry—				
First Year	24	..	..	24
Faculty of Household Science—				
First Year	..	42	..	42
Faculty of Dentistry—				
First Year	..	64	..	64
College of Optometry—				
First Year	9	..	..	9
Summer Session—				
First Year	38	..	..	38
School of Graduate Studies	..	..	36	22
Conservatory of Music	5	..	..	..
Totals	461	312	339	720

DEPARTMENT OF BIOLOGY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
First Year	345	..	79	79
Second Year	44	..	71	115
Third Year	34	..	4	38
Fourth Year	11	..	16	16
Department of University Extension	33	..	..	33
Faculty of Medicine—				
First Year	..	139	..	139
Second Year	..	44	..	..
Third Year	..	24	..	24
Faculty of Dentistry—				
First Year	..	62	..	62
Faculty of Applied Science—				
Fourth Year	..	4	..	4
Faculty of Forestry—				
First Year	..	23	..	23
Fourth Year	..	8	..	8
Faculty of Household Science—				
First Year	..	..	6	6
Second Year	32	..	5	37
School of Graduate Studies	..	..	..	25
Ontario Agricultural College—				
Second and Intermediate Years	..	52	..	52
Third Year	..	24	..	24
Second Year Macdonald Institute	..	60	..	60
College of Optometry		9		9
Department of Public Health Nursing		4		4
Totals	499	453	181	758

DEPARTMENT OF BOTANY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
First Year	345	..	87	87
Second Year	69	..	52	121
Third Year	16	..	4	20
Fourth Year	19	..	5	24
Faculty of Applied Science and Engineering	..	42	..	42
Faculty of Forestry—				
First Year	..	21	..	21
Fourth Year	..	8	..	8
School of Graduate Studies	..	..	20	20
Totals	449	71	168	343

DEPARTMENT OF CHEMISTRY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
First Year	345	..	161	161
Second Year	71	..	94	160
Third Year	23	..	9	14
Fourth Year	4	..	9	13
Faculty of Medicine—				
First Year	..	141	..	141
Second Year	..	107	..	107
Faculty of Applied Science and Engineering—				
First Year	..	39	..	39
Second Year	..	26	..	26
Third Year	..	63	..	63
Fourth Year	..	8	..	8
Faculty of Dentistry—				
First Year	..	62	..	62
Second Year	..	61	..	61
Third Year	..	62	..	62
Faculty of Forestry—				
First Year	24	..	..	24
Second Year	10	..	..	10
Faculty of Household Science—				
First Year	..	..	7	7
Second Year	28	..	6	34
Third Year	9	..	..	..
School of Graduate Studies	..	..	28	21
Totals	514	569	314	1013

DEPARTMENT OF GEOLOGY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
First Year	345	..	47	..
Second Year	..	..	21	21
Third Year	11	..	4	13
Fourth Year	13	..	6	18
Faculty of Applied Science and Engineering—				
Second Year	..	32	..	6
Third Year	..	27	..	10
Fourth Year	..	5	..	5
Faculty of Forestry—				
Second Year	..	8	..	..
Third Year	..	10	..	10
School of Graduate Studies	..	..	9	9
Totals	369	82	87	92

DEPARTMENT OF MINERALOGY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
Second Year	22	..	20	42
Third Year	2	..	9	9
Fourth Year	..	..	6	6
Occasional	1	..	..	1
Faculty of Applied Science and Engineering—				
First Year	..	67	..	67
Second Year	..	27	..	27
Third Year	..	10	..	10
Fourth Year	..	3	..	3
Faculty of Forestry—				
Second Year	..	11	..	11
School of Graduate Studies	..	..	7	7
Totals	25	118	42	183

DEPARTMENT OF PHILOSOPHY

	Pass	Honours
Faculty of Arts—		
First Year	..	10
Second Year	77	19
Third Year	134	13
Fourth Year	69	20
School of Graduate Studies	..	35
Department of University Extension	42	..
Department of Social Service—		
First Year	22	
Second Year	19	
Totals	363	97

DEPARTMENT OF PSYCHOLOGY

	Pass	Pass and Honours	Honours	Laboratory
Faculty of Arts—				
Second Year	63	20	19	19
Third Year	48	12	7	67
Fourth Year	32	11	6	..
Faculty of Medicine—				
Second Year	66	..	..	..
Third Year	139	..	..	18
Fourth Year	20	..	..	..
Dept. of Social Service—				
First Year	33	..	..	..
Second Year	22	..	..	..
Dept. of Public Health Nursing	280	..	..	..
Department of University Extension	26	..	..	..
School of Graduate Studies	..	..	19	10
Occasional Students	10	..	..	..
Totals	739	43	51	114

DEPARTMENT OF POLITICAL ECONOMY

	Pass	Honours
Faculty of Arts—		
First Year	..	112
Second Year	114	128
Third Year	94	72
Fourth Year	68	85
Faculty of Applied Science and Engineering—		
Second Year	110	..
Faculty of Forestry—		
Third Year	10	..
Faculty of Household Science—		
Second Year	16	..
Third Year	7	..
Fourth Year	..	17
School of Graduate Studies	..	23
Department of University Extension	117	
Department of Social Service—		
First Year	18	..
Second Year	22	..
Department of Public Health Nursing	3	..
Occasional Students	10	..
Totals	589	437

DEPARTMENT OF HISTORY

	Pass	Honours
Faculty of Arts—		
First Year	31	107
Second Year	84	85
Third Year	95	75
Fourth Year	61	75
Department of University Extension	167	..
School of Graduate Studies	..	20
Totals	438	362

DEPARTMENT OF ITALIAN AND SPANISH

	Italian		Spanish	
	Pass	Honours	Pass	Honours
Faculty of Arts—				
First Year	14	7	57	28
Second Year	4	3	29	26
Third Year	2	4	22	12
Fourth Year	3	2	16	14
School of Graduate Studies*	..	2	..	1
Totals	23	18	124	81

*Methods and Bibliography 15.

DEPARTMENT OF HOUSEHOLD SCIENCE

	Pass	Honours
Faculty of Arts—		
First Year	..	38
Second Year	..	34
Third Year	11	17
Fourth Year	17	20
Faculty of Household Science—		
First Year	32	7
Second Year	28	6
Third Year	9	7
Fourth Year	6	..
School of Graduate Studies	..	4
Department of Public Health Nursing	26	..
Totals	133	133

(3) Registration in Courses in the Faculty of Arts

Courses	First Year				Second Year				Third Year				Fourth Year				
	U C	V C	T C	M C	U C	V C	T C	M C	U C	V C	T C	M C	U C	V C	T C	M C	Totals
Pass	194	72	44	55	131	78	28	35	116	51	19	25	84	38	13	18	1,001
Classics	10	4	3	2	6	8	..	..	4	2	..	2	2	1	..	..	44
Greek and Hebrew	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2
Orientals	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2
Orientals (Greek Option)	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2
Hebrew and Ancient History	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	2
French, Greek and Latin	3	6	..	1	1	2	..	3	1	..	..	1	2	..	..	1	21
Moderns	37	18	2	5	25	13	1	4	16	11	4	6	24	13	1	4	184
English and History	29	31	9	6	9	12	3	3	21	15	2	4	16	22	5	3	190
Modern History	3	2	1	..	10	8	3	..	8	5	..	..	5	4	..	..	49
Political Science	8	4	1	1	18	11	6	..	19	8	2	1	21	8	1	..	109
Philosophy (English or History Option)	6	3	..	1	6	2	..	..	2	3	..	..	4	4	1	..	32
Psychology	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Philosophy	..	1	..	..	5	3	2	6	3	1	1	6	4	2	..	3	37
Mathematics	6	3	1	..	5	..	..	..	5	4	..	1	3	..	..	..	28
Mathematics and Physics	28	28	3	1	15	12	4	1	16	3	3	..	8	4	..	..	126
Physics and Chemistry	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	3
Natural and Physical Sciences	26	13	5	..	..	..	..	..	..	..	..	..	..	..	..	..	44
Physics	..	..	..	..	1	1	..	..	2	2	..	..	..	..	..	..	6
Biology	..	..	..	..	3	1	..	..	2	1	..	..	..	4	..	..	11
Physiology and Biochemistry	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Biological and Medical Sciences	..	..	..	..	12	14	1	..	13	6	2	1	15	9	2	..	75
Chemistry, Mineralogy and Geology	..	..	..	..	9	1	1	..	4	1	..	..	2	4	..	..	22
Chemistry	..	..	..	..	3	1	..	..	2	..	..	..	..	2	..	..	8
Geology and Mineralogy	..	..	..	..	2	3	..	..	1	..	..	..	3	..	1	..	10
Science (General)	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	2
Household Science	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2
Household Economics	20	13	3	1	15	14	3	2	7	9	1	..	12	4	2	1	107
Commerce and Finance (B.Comm.)	69	15	6	5	44	9	1	1	24	6	..	2	31	10	1	1	225
Duplicates	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	3
Totals	439	214	79	78	322	193	55	55	268	129	34	49	240	130	27	31	2,343

(4) REGISTRATION FOR GRADUATE COURSES

	Ph.D.	M.A.	M.D.	M.A.Sc.	M.Arch.	C.E.	Met.E.	D.Paed.	M.S.A.	Grad.
Dept. of Anatomy	1	..	..	...	..	..	..	..	..	..
" " Anthropology	..	1	..	..	..	..	..	..	..	..
" " Architecture	..	..	..	..	1	..	..	..	..	..
" " Astronomy	..	2	..	..	..	..	..	..	..	1
" " Biochemistry	3	2	..	..	..	..	..	..	1	..
" " Biology	4	11	..	..	..	..	..	..	2	1
" " Botany	6	7	..	..	..	..	..	..	..	..
" " Chemical Engineering	..	..	..	4	..	..	..	..	2	1
" " Chemistry	17	5	..	..	..	..	..	..	..	..
" " Civil Engineering	..	..	..	..	..	2	..	..	..	6
" " Classics	..	2	..	..	..	..	..	..	..	..
" " Educational Theory	1	..	..	..	..	..	..	..	..	..
" " Elec. Engineering	33	..	..	..	..	..	..	..	..	24
" " English	..	20	..	..	..	..	..	..	..	1
" " Food Chemistry	..	2	..	..	..	..	..	..	..	1
" " Forestry	..	2	..	..	..	..	..	..	..	..
" " Geology and Palaeontology	8	..	..	..	..	..	..	..	..	..
" " German	..	1	..	..	..	..	..	..	..	1
" " History	2	9	..	..	..	..	..	..	..	2
" " Household Science	..	2	..	..	..	..	..	..	..	..
" " Hygiene and Prev. Med	1	2	..	..	..	..	..	..	..	..
" " Mathematics	2	2	..	..	..	..	..	..	..	..
" " Mech. Engineering	..	..	..	..	..	..	..	..	..	..
" " Medicine	..	..	6	..	..	..	1	..	..	..
" " Metallurg. Engineering	..	..	..	..	..	..	..	..	..	..
" " Mineralogy	3	1	..	..	..	..	..	..	..	..
" " Mining Engineering	..	..	..	..	..	..	..	..	..	..
" " Path. and Bacteriology	..	..	..	..	..	..	..	..	..	..
" " Pathological Chemistry	2	..	..	..	..	..	..	44	..	..
" " Pedagogy	..	..	..	..	..	..	..	..	..	..
" " Pharmacology	..	1	..	..	..	..	..	..	..	22
" " Philosophy	3	18	..	..	..	..	..	..	..	..
" " Physics	12	7	..	..	..	..	..	..	..	..
" " Physiology	3	5	..	..	..	..	..	..	..	5
" " Political Science	4	12	..	..	..	..	..	..	..	4
" " Psychology	5	6	..	..	..	..	..	..	..	6
" " Romance Languages	2	10	..	..	..	..	..	..	..	..
" " Semitic Languages	7	7	..	..	..	..	..	..	..	..
" " Surgery	..	..	..	..	..	..	..	..	..	..
" " Zymology	..	2	..	..	..	..	..	..	..	..
Special Committee	1	..	..	..	..	..	..	..	..	..
Totals	88	139	6	4	1	2	1	44	5	75

APPENDIX C

RESULTS OF EXAMINATIONS

(1) Faculty of Arts.
(2) Faculty of Medicine.
(3) Faculty of Applied Science and Engineering.
(4) Faculty of Household Science.
(5) Ontario College of Education.
(6) Faculty of Forestry.
(7) Faculty of Music.
(8) Faculty of Dentistry.

(1) Faculty of Arts

First Year

	University of Toronto	Univ. Coll.	Vic. Coll.	Trin. Coll.	St. M. Coll.	Totals	Passed	Starred	Failed	Transferred	Aegrotat	Deferred	Debarred
Pass	..	174	67	41	49	331	136	89	106	..	11	..	49
Supplementals	..	42	22	8	12	84	64	30	..	..	..	..	..
Classics	..	9	4	3	2	18	16	..	..	2	..	..	..
French, Greek and Latin	..	3	6	..	1	10	6	..	..	4	..	..	..
English and History	..	29	31	9	7	76	40	..	..	36	2	..	..
Moderns	..	37	18	2	5	62	43	1	..	18	2	..	..
Political Science and Modern History	..	11	6	2	1	20	14	..	..	6	1	..	1
Philosophy	..	..	1	..	..	1	1	..	..	..	..	..	..
Philosophy, (English or History)	..	5	3	..	1	9	6	..	..	3	..	..	1
Commerce and Finance	..	66	15	6	5	92	41	16	1	34	3	3	1
Mathematics	..	5	3	1	..	9	4	1	..	4	..	..	..
Mathematics and Physics and Physics and Chemistry	..	27	27	4	1	59	29	1	..	29	1	..	2
Natural and Physical Sciences	..	26	12	5	..	43	33	3	..	7	..	..	..
Household Economics	..	19	12	3	1	35	27	1	..	7	1	..	..
Household Science	..	..	1	..	..	1	..	..	..	1	..	..	..
Occasional Students	..	3	1	1	..	5	4	..	1	..	..	..	..
Duplicates	..	2	..	..	1	3	3	..	..	..	..	..	..
Totals	..	454	229	85	84	852	451	142	108	151	21	3	54

Second Year

	University of Toronto	Univ. Coll.	Vic. Coll.	Trin. Coll.	St. M. Coll.	Totals	Passed	Starred	Failed	Transferred	Aegrotat	Deferred	Debarred
Pass	..	124	75	28	32	259	136	58	65	..	5	..	11
Supplementals	..	31	18	6	4	59	44	15	..	..	..	..	..
Classics	..	6	8	..	..	14	12	1	..	1	1	..	..
Orientals	..	..	..	2	..	2	1	1	..	..	..	..	..
French, Greek and Latin	..	1	2	..	3	6	5	..	..	1	..	..	..
English and History	..	9	12	3	3	27	24	..	..	3	..	..	2
Moderns	..	25	12	1	4	42	37	..	..	5	2	..	..
Modern History	..	9	8	3	..	20	15	..	..	5	..	..	6
Political Science	..	17	11	6	..	34	28	1	..	5	..	..	5
Philosophy	..	5	3	2	6	16	15	1	..	..	..	1	..
Philosophy (English or History)	..	6	3	..	..	9	7	2	..	..	1	..	..
Commerce and Finance	..	42	9	1	1	53	36	4	9	4	1	..	1
Mathematics	..	5	..	..	..	5	4	..	..	1	..	..	..
Mathematics and Physics	..	14	12	3	1	30	16	..	9	5	..	..	5
Physics and Chemistry	..	1	..	..	..	1	..	1	..	..	..	..	..
Psychology	..	..	..	..	..	..	..	..	..	..	..	..	..
Physics	..	1	1	..	..	2	..	..	1	1	..	..	1
Biology	..	3	1	..	..	4	1	3	..	..	1	1	..
Physiology and Biochemistry and Biological and Medical Sciences	..	12	14	1	..	27	21	1	1	4	1	1	2
Chemistry	..	3	1	..	..	4	1	1	1	1	..	1	1
Chemistry, Mineralogy and Geology	..	9	1	1	..	11	8	2	..	1	..	1	1
Geology and Mineralogy	..	2	3	..	..	5	1	2	1	1	1	..	1
Science (General)	..	..	..	..	..	..	..	..	..	..	..	..	..
Household Science	..	..	..	..	..	..	..	..	..	..	..	..	..
Household Economics	..	14	14	3	2	33	19	10	2	2	1	..	2
Occasional Students	1	2	..	1	..	4	4	..	..	..	..	..	..
Totals	1	341	208	61	56	667	435	103	89	40	14	5	38

Third Year

	University of Toronto	Univ. Coll.	Vic. Coll.	Trin. Coll.	St. M. Coll.	Totals	Passed	Starred	Failed	Transferred	Aegrotat	Deferred	Debarred
Pass	..	113	50	18	24	205	156	32	17	..	9	..	18
Supplementals	..	25	13	1	5	44	38	6	..	..	..	..	..
Classics	..	4	2	..	2	8	7	..	1	..	..	..	..
Greek and Hebrew	..	1	..	..	..	1	1	..	..	..	..	..	..
French, Greek and Latin	..	1	..	..	1	2	1	1	..	..	..	..	..
English and History	..	21	15	2	4	42	37	1	..	4	1	1	3
Moderns	..	15	11	4	6	36	33	1	2	..	..	..	..
Modern History	..	8	4	..	..	12	11	..	1	..	1	..	..
Political Science (Economics)	..	13	4	1	1	19	18	..	..	1	..	..	4
Political Science (Politics and Law)	..	6	4	1	..	11	10	..	..	1	..	..	1
Philosophy	..	4	1	1	6	12	11	1	..	..	..	..	4
Philosophy (English or History)	..	1	3	..	..	4	4	..	..	..	..	..	..
Commerce and Finance	..	24	5	..	2	31	22	6	3	..	2	2	..
Mathematics	..	5	4	..	1	10	7	..	3	..	1	..	1
Mathematics and Physics	..	16	2	3	..	21	14	2	5	..	1	..	1
Psychology	..	1	..	..	..	1	..	1	..	..	..	1	..
Physics	..	2	2	..	..	4	4	..	..	..	2	..	..
Biology	..	2	1	..	..	3	3	..	..	..	..	..	..
Physiology and Biochemistry	..	..	..	..	..	..	..	..	..	..	..	..	..
Biological and Medical Sciences	..	13	6	2	1	22	22	..	..	..	..	..	..
Chemistry	..	2	..	..	..	2	1	1	..	..	1	..	..
Chemistry, Mineralogy & Geology I	..	2	1	..	..	3	3	..	..	..	..	..	..
Chemistry, Mineralogy & Geology II	..	2	..	..	..	2	2	..	..	..	..	..	..
Geology and Mineralogy	..	1	..	..	..	1	1	..	..	..	..	..	..
Science (General)	..	..	1	..	..	1	1	..	..	..	..	..	..
Household Science	..	..	..	..	..	..	..	..	..	..	..	..	..
Household Economics	..	7	9	1	..	17	17	..	..	..	..	..	..
Occasional Students	1	2	..	1	..	4	4	..	..	..	..	..	..
Duplicates	..	..	..	..	1	1	1	..	..	..	..	..	..
Totals	1	291	138	35	52	517	427	52	32	6	18	4	32

Fourth Year

	University of Toronto	Univ. Coll.	Vic. Coll.	Trin. Coll.	St. M. Coll.	Totals	Passed	Granted standing on Active Service	Starred	Failed	Aegrotat	Pass Degree
Pass	..	83	38	13	17	151	131	5	16	4	5	..
Supplementals	..	1	2	..	2	5	3	..	2	..	..	..
Classics	..	2	1	..	..	3	3	..	..	..	1	..
Orientals (Greek)	..	2	..	..	..	2	2	..	..	..	..	..
Hebrew and Ancient History	..	1	..	..	..	1	..	..	1	..	..	..
French, Greek and Latin	..	2	..	..	1	3	3	..	..	..	1	..
English and History	..	16	22	5	3	46	46	..	..	..	1	..
Moderns	..	24	13	1	4	42	41	..	1	..	5	2
Modern History	..	5	4	..	..	9	9	1	..	..	..	..
Political Science (Economics)	..	5	1	..	..	6	6	..	..	..	..	..
Political Science (Politics and Law)	..	17	6	1	..	24	23	..	1	..	..	4
Philosophy	..	4	2	..	3	9	9	..	..	..	..	..
Philosophy, English or History	..	4	4	1	..	9	9	..	..	..	..	..
Commerce and Finance	..	31	10	1	1	43	38	..	4	1	1	..
Mathematics	..	3	..	..	..	3	3	..	..	..	..	..
Mathematics and Physics I	..	4	2	..	..	6	6	..	..	..	..	1
Mathematics and Physics II	..	4	2	..	..	6	6	..	..	..	..	..
Mathematics and Physics III	..	..	..	..	..	..	..	..	..	..	..	..
Biology	..	..	4	..	..	4	4	..	..	..	..	..
Biological and Medical Sciences	..	15	9	2	..	26	26	1	..	..	..	..
Chemistry	..	..	2	..	..	2	2	..	..	..	..	..
Chem., Mineral. and Geol. I	..	2	3	..	..	5	5	..	..	..	..	1
Chem., Mineral. and Geol. II	..	..	1	..	..	1	1	..	..	..	..	..
Geology and Mineralogy	..	3	..	1	..	4	3	..	1	..	..	..
Science (General)	..	..	1	..	..	1	1	..	..	..	..	..
Household Science	..	1	..	..	..	1	1	..	..	..	..	..
Household Economics	..	12	4	2	1	19	18	..	1	..	..	..
Occasional Students	..	1	..	..	..	1	1	..	..	..	..	..
Totals		242	131	27	32	432	400	7	27	5	14	8

TEACHERS' CLASSES

	Passed	Starred	Aegrotat
May Examination	163	30	..
September Examination	125	25	..
Totals	288	55	..

(2) FACULTY OF MEDICINE

	Passed	Starred	Failed
First Year	84	29	20
Second Year	95	14	2
Third Year	91	28	11
Fourth Year	89	22	2
Fifth Year	90	16	2
Sixth Year	104	6	2
D.P.H	4	1	..
B.Sc. (Med.)	7	..	..
Totals	564	116	39

(3) FACULTY OF APPLIED SCIENCE AND ENGINEERING

	Passed with Honours	Passed	Starred	Failed
First Year—				
Civil Engineering	5	10	4	4
Mining Engineering	3	13	8	1
Mechanical Engineering	5	17	7	0
Architecture	0	7	6	0
Chemical Engineering	9	21	8	6
Electrical Engineering	15	23	12	10
Metallurgical Engineering	0	5	3	1
Second Year—				
Civil Engineering	2	10	4	5
Mining Engineering	1	5	3	2
Mechanical Engineering	3	17	8	2
Architecture	4	8	3	0
Chemical Engineering	2	14	5	4
Electrical Engineering	5	17	5	1
Metallurgical Engineering	0	5	2	1
Third Year—				
Civil Engineering	3	14	7	0
Mining Engineering	2	8	3	0
Mechanical Engineering	4	14	5	4
Architecture	0	6	4	0
Chemical Engineering	2	12	6	3
Electrical Engineering	4	20	5	8
Metallurgical Engineering	0	3	1	0
Fourth Year—				
Civil Engineering	6	12	2	0
Mining Engineering	1	5	0	0
Mechanical Engineering	4	16	0	0
Architecture	3	5	2	0
Chemical Engineering	8	10	0	0
Electrical Engineering	11	22	0	0
Metallurgical Engineering	0	1	0	0
Totals	102	320	113	52

(4) FACULTY OF HOUSEHOLD SCIENCE

	Passed	Starred	Transferred to Pass Course	Failed
First Year	17	15	1	6
Second Year	16	10	1	5
Third Year	13	2	..	..
Fourth Year	6	..	..	..
Totals	52	27	2	11

(5) ONTARIO COLLEGE OF EDUCATION

	Passed	Failed
*High School Assistants' Course	231	..
Specialists' Courses	108	..
First Class Public School Course	20	..
Elementary Art Course	60	..
Elementary Physical Education Course	129	..
One Year Household Science Course	6	..
Bachelor of Pedagogy Course	32	..
Bachelor of Pedagogy Course (passed in part)	30	..
Number who failed in whole or part	..	40
Totals	616	40

*Many of these are included among those who passed or failed in the other courses in this list.

(6) FACULTY OF FORESTRY

	Honours	Starred	Failed
First Year	12	4	5
Second Year	5	3	2
Third Year	10	..	..
Fourth Year	9	..	..
Totals	36	7	7

(7) FACULTY OF MUSIC

	Passed	Starred	Failed
First Year	4	2	3
Second Year	6	6	9
Third Year	3	3	9
Doctor of Music	1	..	..
Totals	14	11	21

(8) FACULTY OF DENTISTRY

	Passed	Starred	Failed
First Year	38	14	6
Supplementals, students not in attendance	1	..	..
Second Year	44	15	2
Third Year	39	18	4
Fourth Year	46	13	..
Fifth Year	61	..	1
Graduate Student	1	..	..
Dental Nurses	14	..	..
Totals	244	60	13

APPENDIX D

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

The geographical distribution of students is as follows:

FACULTY OF ARTS

	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	Duplicates	Totals
Ontario: (1) Province	194	514	404	113	104	18	1,311
(2) Toronto	177	734	209	74	94	9	1,279
Nova Scotia	2	2	..	2	..	..	6
New Brunswick	1	2	..	..	1	..	4
Prince Edward Island	..	4	..	..	..	..	4
Quebec	3	4	2	..	2	1	10
Manitoba	1	3	1	..	..	..	5
Saskatchewan	1	11	28	1	..	..	41
Alberta	..	6	8	..	..	..	14
British Columbia	1	9	5	1	1	..	17
Yukon	..	3	..	..	..	..	3
United States	2	26	2	6	6	..	46
Elsewhere	5	17	16	1	1	1	40
Duplicate registrations	..	..	..	..	..	29	..
Totals	387	1,335	675	198	214	..	2,780

SUMMARY

	Faculty of Arts	Faculty of Medicine	Faculty of Applied Science and Engineering	Faculty of Household Science	College of Education	Faculty of Forestry	Faculty of Music	School of Graduate Studies	Faculty of Dentistry.	Department of Social Service	Department of Public Health Nursing	Course in Occupational Therapy	Duplicates	TOTALS
Ontario:														
(1) Province	1,311	335	228	34	272	20	16	115	169	27	135	8	34	2,636
(2) Toronto	1,279	339	224	57	112	14	25	171	89	56	108	16	32	2,458
Nova Scotia	6	7	..	..	1	..	..	3	1	5	..	..	1	22
New Brunswick	4	..	1	..	1	1	..	2	3	..	4	..	..	16
Prince Edward Island	4	..	..	..	..	1	..	..	..	..	1	..	..	6
Quebec	10	2	..	1	..	2	..	3	1	2	..	..	..	21
Manitoba	5	1	1	..	4	1	..	11	25	..	1	1	..	50
Saskatchewan	41	20	6	..	7	..	..	8	16	2	4	..	1	103
Alberta	14	6	5	1	..	1	..	10	6	2	1	..	..	46
British Columbia	17	26	7	1	7	..	2	12	4	2	1	..	2	77
Yukon	3	..	2	..	..	..	..	..	..	..	..	..	..	5
United States	46	13	3	1	2	2	3	8	3	2	3	..	..	86
Elsewhere	40	10	10	3	2	7	..	22	1	1	7	..	..	103
Totals	2,780	759	487	98	408	49	46	365	318	99	265	25	70	5,629

The students from the Province of Ontario are distributed as follows:

	Faculty of Arts	Faculty of Medicine	Faculty of Applied Science and Engineering	Faculty of Household Science	Ontario College of Education	Faculty of Forestry	Faculty of Music	School of Graduate Studies	Faculty of Dentistry	Department of Social Service	Department of Public Health Nursing	Course in Occupational Therapy	Duplicates	TOTALS
Algoma	16	5	4	..	1	1	..	1	4	1	2	..	..	35
Brant	36	13	8	1	5	..	..	3	1	1	1	1	2	68
Bruce	30	7	3	..	7	..	..	..	6	..	4	1	2	56
Carleton	41	7	2	1	21	1	..	5	14	2	4	..	..	98
Dufferin	15	4	1	2	3	..	..	2	3	..	2	..	..	32
Dundas	10	1	1	1	6	..	..	..	2	..	1	..	..	22
Durham	34	5	2	..	4	..	1	1	1	1	3	..	1	51
Elgin	15	7	2	1	6	..	..	2	3	..	..	1	..	37
Essex	35	13	4	2	4	..	2	2	7	..	..	..	1	68
Frontenac	4	..	..	..	7	..	1	1	1	..	1	..	1	14
Glengarry	2	1	..	..	6	..	..	..	..	1	..	..	..	10
Grenville	11	2	..	..	1	1	..	1	1	..	..	..	2	15
Grey	26	10	5	1	4	..	..	4	..	..	6	1	..	57
Haldimand	28	11	3	..	4	..	..	..	1	..	..	..	1	46
Haliburton	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Halton	43	6	11	1	6	1	1	3	3	..	5	..	1	79
Hastings	16	5	7	1	8	..	..	2	2	..	5	..	..	46
Huron	52	13	7	..	3	..	..	4	7	1	4	..	2	89
Kenora	4	..	2	..	..	..	..	..	2	..	1	..	..	9
Kent	15	7	3	..	8	..	..	1	3	..	..	..	1	36
Lambton	27	5	3	1	4	1	..	4	2	..	3	..	..	50
Lanark	18	1	..	..	10	1	..	3	9	3	5	..	..	50
Leeds	15	2	1	..	3	..	..	..	2	1	..	..	..	24
Lennox & Addington	9	2	..	..	4	..	..	..	..	..	1	..	..	16
Lincoln	31	10	10	3	6	1	..	2	2	..	3	..	..	68
Manitoulin	3	..	1	..	..	..	..	..	..	..	..	..	..	4
Middlesex	18	5	8	2	23	..	..	10	7	..	4	..	1	76
Muskoka	10	2	4	..	4	..	..	5	2	..	3	..	..	30
Nipissing	9	4	..	..	3	..	..	1	..	..	2	..	1	18
Norfolk	19	6	4	1	2	..	..	1	4	..	1	..	..	38
Northumberland	16	4	6	..	4	..	1	2	3	..	2	..	1	37
Ontario	52	12	9	2	7	1	..	3	6	1	1	..	1	93
Oxford	28	6	9	..	8	1	1	2	2	2	3	..	1	61
Parry Sound	8	..	2	2	1	..	..	..	3	..	4	..	..	20
Peel	34	10	7	2	5	..	..	2	3	..	6	..	1	68
Perth	40	7	6	..	6	1	..	4	2	1	1	..	..	68
Peterborough	33	5	4	1	7	..	1	1	4	..	3	..	..	59
Prescott	1	1	..	..	1	..	..	..	1	..	..	..	..	4
Prince Edward	2	1	..	..	4	..	..	1	2	..	..	..	..	10
Rainy River	3	..	..	..	2	..	..	1	..	..	..	..	..	6
Renfrew	19	4	1	..	3	..	..	2	5	1	4	..	..	39
Russell	3	1	..	..	..	..	..	..	..	..	..	..	..	4
Simcoe	87	19	14	1	10	1	..	4	6	1	18	1	5	157
Stormont	3	1	..	..	4	..	..	..	..	..	1	..	..	9
Sudbury	7	6	..	1	..	1	..	..	..	..	..	..	..	15
Thunder Bay	10	3	7	..	..	..	1	..	4	..	1	..	..	26
Timiskaming	9	..	1	..	3	..	..	2	..	..	2	..	..	17
Victoria	13	5	2	..	8	..	..	..	..	..	2	..	..	30
Waterloo	51	12	10	1	7	..	..	3	5	1	2	..	2	90
Welland	33	14	8	1	3	..	..	1	6	1	4	..	1	70
Wellington	49	19	6	1	6	..	2	11	2	2	2	..	2	98
Wentworth	124	26	17	1	7	1	5	9	18	4	3	2	2	215
York	94	25	23	3	13	7	..	9	8	2	15	1	2	198
Toronto	1,279	339	224	57	112	14	25	171	89	56	108	16	32	2,458
Totals	2,590	674	452	91	384	34	41	286	258	83	243	24	66	5,094